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C2

Control Lake Timber Sales

Final Environmental Impact Statement

Volume II—Appendices

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Contract No. 53-0109-3-00369
Control Lake Environmental Impact Statement**



Volume II

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Appendix A

Reasons for Scheduling the Environmental Analysis of the Control Lake Project Area

Appendix A

Reasons for Submitting
the Environmental Review
of the
Control Lake Project Area

Reasons For Scheduling The Environmental Analysis Of The Control Lake Project Area

Summary

Reasons for scheduling the Control Lake Project Area at this time may be summarized as follows:

1. The Control Lake Project Area contains a sufficient number of acres allocated to development land use designations (LUDs) to make timber harvest in the area appropriate under the Tongass Land Management Plan (TLMP). Available information indicates harvest of the amount of timber being considered for this project can occur consistent with TLMP standards and guidelines and other requirements for resource protection.
2. Areas with available timber will be necessary to consider for harvest in order to seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle, pursuant to Section 101 of the Tongass Timber Reform Act (TTRA).
3. Effects on subsistence resources are projected to differ little according to which sequence these areas are subjected to harvest. Harvesting other areas with available timber on the Tongass National Forest is expected to have similar potential effects on resources, including those used for subsistence, because of widespread distribution of subsistence use and other factors. Harvest of these other areas is foreseeable, in any case, over the forest planning horizon under the TLMP.
4. Providing substantially less timber volume than required to meet TLMP and TTRA Section 101 timber supply and employment objectives in order to avoid harvest in the Control Lake Project Area is not necessary or reasonable.
5. It is reasonable to schedule harvest in the Control Lake Project Area at the present time rather than other areas in terms of previous harvest entry and access, level of controversy over subsistence and other effects, and the ability to complete the National Environmental Policy Act (NEPA) process and make timber available to meet the needs of dependent industries. Other areas that are reasonable to consider for harvest in the near future are the subject of other project EISs that are currently ongoing or scheduled to begin soon.

More detail regarding the scheduling of the environmental analysis for the Control Lake Project Area is presented in this appendix in three subsections:

Southeast Alaska Timber Demand
Tongass Land Management Plan
Forest Plan Implementation

Southeast Alaska Timber Demand

Introduction.

In general, this section indicates that areas with available timber will be necessary to consider for harvest in order to seek to provide a supply of timber from the Tongass National Forest which (1) meets the

annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle, pursuant to Section 101 of the Tongass Timber Reform Act.

Meeting Market Demand.

Timber demand in Southeast Alaska can vary dramatically from year to year. The level of demand is dependent on complex interactions among factors that are difficult, if not impossible, for the industry or the Forest Service to predict with accuracy. Such factors include fluctuations in interest rates, housing starts, business cycles in the United States and overseas, changes in the value of the dollar with respect to foreign currencies, changes in import tariffs, and changes in export policies in other countries.

To be responsive to market demand, the Forest Service attempts to provide an opportunity for the industry as a whole to accumulate a supply of purchased but unharvested timber (i.e. volume under contract) equal to about three years of timber consumption. There are a number of reasons for allowing the accumulation of volume under contract. First, this allows the industry ample time to plan an orderly and systematic harvest schedule that meets all timing restrictions and permit requirements. Second, it allows the industry to better manage its financial resources and to secure financing on the basis of longer term timber supply. Third, it allows time for the necessary infrastructure (roads, log transfer facilities, and logging camps) to be put in place prior to timber harvest. Finally, an ample timber supply gives the industry more opportunity to sustain itself through market cycles. If demand for pulp or lumber in any year suddenly increases, producers will have access to enough timber to respond to the increase in demand without waiting for the Forest Service or the Congress to take action. Normally, the unharvested volume under contract will be drawn down during high points in the market when mills increase production, and built up when markets are poor and production declines. In response to changes observed in the volume under contract the Forest Service may consider adjusting its budget and timber program.

From the initiation of a timber sale project, through EIS and decision document preparation, and to the sale of timber from the project usually requires three to four years. Such lengthy preparation time means that in order to have a stable timber supply and be able to respond to upswings in the market, there is a need to have ongoing NEPA projects. It is also necessary to have a supply of NEPA cleared volume available for sale if an increased market demand is to be met.

The timber industry in southeast Alaska is now in a period of transition. Following the closings of the APC and KPC pulp mills, new mills are either under construction or are being proposed, and existing mills are being upgraded. There is currently a joint venture between KPC and Sealaska for a veneer plant at Ward Cove in Ketchikan. This mill would also use utility grade log for chips. The veneer could be sent to other mills for manufacture into plywood or laminated veneer lumber, or a revamped facility at the former KPC pulp mill site could manufacture the veneer into secondary products. The plant could be on line as soon as the spring of 1999 with a capacity of 150 million board feet annually (Jim Erickson, Sealaska 3/9/98). A new Seley Log and Lumber Company mill opened in February of 1998 on Gravina Island, in the Ketchikan area. The facility will employ 60 people if run at full capacity, and will house both a sawmill and secondary and tertiary manufacturing mills. Product outputs will include decking, fencing, and possibly furniture. The operation is expected to process 30 MMBF annually (Alan Monk, Seley Inc., March 1998). As for existing southeast Alaska mills, the Viking Lumber sawmill in Klawock, on Prince of Wales Island, recently underwent a modernizing upgrade and re-tooling; computerized equipment and a whole-log chipper were added (USDA Forest Service 1996). Also, the APC sawmill in Wrangell has been purchased by Silver Bay Logging (Wrangell Sentinel 1/15/98) and will be manufacturing wood products in 1998. All of these mills will depend to some extent on a supply of timber from the Tongass National Forest.

The market demand analysis in the 1997 TLMP was based on a study by David Brooks and Richard Haynes, research scientists at the Pacific Northwest Research Station. Following the release of TLMP a final version of the Brooks and Haynes report was published, and it is this final report that is referenced and cited throughout this appendix. Three scenarios were developed in the study to display the demand

for Tongass National Forest timber through the year 2010 (Brooks and Haynes 1997). For the low scenario, high stumpage, harvest and manufacturing costs limit Alaska's share of markets. Under the high scenario, increased harvest and manufacturing efficiency, with resulting lower costs, make Alaskan mills more competitive. Projected annual timber demand for the next decade is 113 MMBF for the low scenario, 133 MMBF for the medium and 156 MMBF for the high scenario. These three scenarios do not consider the Seley mill that is under construction on Gravina Island, the proposed KPC veneer plant, or the possible sale and reopening of the APC sawmill in Wrangell. Nor do they account for shifting markets in Japan and the newfound willingness of the Japanese to purchase Alaskan milled lumber, manufactured wood products, laminates, etc. All of these factors would lead to an increase in demand over the totals listed for the three scenarios. The actual ASQ for the Tongass averages 267 MMBF on an annual basis, however a level of 200 MMBF or less is more likely to be offered over the next few years, given current market conditions and the transition that both the timber industry and the Forest Service are experiencing (USDA Forest Service 1997).

Tongass Land Management Plan

Chapter 1 of this EIS includes an explanation of how this project relates to the Tongass Land Management Plan. That section describes the Land Use Designations (LUDs) which put land areas under different types of management prescriptions. Chapter 1 also explains that the Forest is divided into land areas called value comparison units (VCUs). In most cases, VCUs are roughly equivalent to large watersheds. A VCU may contain one or more LUDs.

The allowable sale quantity (ASQ) calculated in the TLMP is an upper limit, by decade, on the volume of timber that may be offered for sale from suitable timberland on the Forest as part of the regularly scheduled timber sale program. The current ASQ is 2.67 billion board feet per decade, which equates to an annual average of 267 million board feet. There are 676,000 acres suitable for timber management under the Forest Plan. Three LUDs (Timber Production, Modified Landscape, and Scenic Viewshed) account for nearly all of these suitable acres (USDA Forest Service 1997).

1. Cumulative Effects

The TLMP considers the cumulative effects for forest-wide acres managed for timber production for both the long-term and short-term timber sale programs. These effects are discussed at the end of their respective sections.

Analysis points to the need to schedule harvest in VCUs assigned management prescriptions which permit consideration of timber harvest, including the VCUs within the Control Lake Project Area. These VCUs in the Forest plan would be needed to help meet TLMP and TTRA timber supply objectives. The forest-wide cumulative effects analysis in the TLMP supports the conclusion that this harvest can be accomplished within existing standards and guidelines and other requirements for resource protection.

2. Subsistence

With the passage of the Alaska National Interest Lands Conservation Act (ANILCA), Congress recognized the importance of subsistence resources to rural residents of Alaska. In particular, prior to any disposition of public lands, an agency must first complete a subsistence effects evaluation, including consideration of the availability of other lands (ANILCA 810 (a)).

Based on a review of available harvest volumes for each value comparison unit (VCU) on the Ketchikan Area of the Tongass National Forest, it appeared that in order to meet market demand, most of the Timber Production land use designations would need some level of harvest in the first decade of the 1997 Tongass Land Management Plan. A tentative sale schedule was developed, and will be updated every six months based on this analysis (Ketchikan Area Sale Schedule Summary, March 1997). In short, harvesting at this level to meet market demand, would indicate a level of impact to all subsistence use areas. However, the most significant impacts on subsistence deer habitat would not occur until 20 to 30 years after timber harvest when the second growth canopy closes. When those impacts to subsistence deer habitat are viewed from a reference point 20 years in the future, the particular importance of which areas are scheduled first during a 5-year period appears to be minor.

In considering rural communities that may be most affected by any proposed timber harvest in the Control Lake Project Area, Coffman Cove, Craig, Hollis, Hydaburg, Klawock and Thorne Bay appear to have the strongest cultural and subsistence ties to the area. Each community has its own level of reliance on subsistence, as well as its own level of reliance on the Control Lake Project Area for supplying subsistence resources, especially deer. The following information about each community's subsistence

use is a summary of more detailed information provided in Chapter 3 and 4 of the Control Lake Project EIS and the project files.

Coffman Cove Areas adjacent to the road system and in the immediate vicinity of Coffman Cove are some of the major subsistence use areas for the community. Thirty-seven percent of Coffman Cove's deer harvest came from the Project Area WAA's between 1988 and 1991. There is a significant possibility of a significant restriction of the subsistence use of deer by Coffman Cove residents, if non-rural harvesting is not restricted, for all alternatives.

Craig Areas adjacent to the road system and those accessed by boat in the southwest portion of the Project Area are some of the major subsistence use areas within the Project Area. Approximately fifty percent of Craig's deer came from the Project Area WAAs between 1987 and 1990. There is a significant possibility of a significant restriction of the subsistence use of deer by Craig residents, if non-rural harvesting is not restricted, for all alternatives.

Hollis Fourteen percent of Hollis' deer came from the Project Area WAAs between 1987 and 1990. Analysis shows that there is an adequate number of deer to meet the current subsistence demand for deer now, however, it may be necessary to restrict the sport harvest of deer in the future.

Hydaburg Eighteen percent of Hydaburg's deer came from the Project Area WAAs between 1987 and 1990. Analysis shows that there is an adequate number of deer now, however, it may be necessary to restrict the sport harvest of deer in the future.

Klawock Subsistence harvest methods within the community of Klawock have been changing since the road tie with Hollis was made in 1984. Prior to that time subsistence harvest was mostly tied to boating activities. The community places high importance on the southwest portion of the Project Area for traditional and cultural subsistence values. Sixty-six percent of Klawock's deer came from the Project Area WAAs between 1987 and 1990. There is a significant possibility of a significant restriction of the subsistence use of deer by Klawock residents, if non-rural harvesting is not restricted, for all alternatives.

Thorne Bay Fifty percent of Thorne Bay's deer came from the Project Area WAAs between 1988 and 1991. There is a significant possibility of a significant restriction of the subsistence use of deer by Thorne Bay residents, if non-rural harvesting is not restricted, for all alternatives.

As a result of several considerations, including the availability of subsistence resources in non-development land use designations on Prince of Wales Island (such as the Honker and Rio Roberts OGRs, the Semi-remote Recreation LUD in the southwest part of the project area and the Karta Wilderness adjacent to the Project Area), standards and guidelines designed to maintain habitat (such as the 1,000-foot beach and estuary fringes), the relative independence of most communities from subsistence resources in the Project Area, as well as analysis contained in the 1997 Tongass Land Management Plan EIS and earlier analyses, the Forest Service determined to schedule an environmental analysis of the Control Lake area. Other projects including Central Prince of Wales, Polk Inlet, Lab Bay, Sea Otter Sound, Staney, Luck, North Thorne, and others, are being implemented, or will undergo environmental analysis within the next 3 to 5 years.

Extensive forest-wide cumulative effect analysis has been included in the 1997 TLMP EIS (TLMP EIS, Part 2, pages 3-529 through 3-685). That analysis, and the tables of data with the maps in Appendix H of the 1997 TLMP EIS are incorporated by reference into this document. The data in Appendix H indicates subsistence hunting of deer and other uses in virtually every area of the Tongass National Forest that have substantial quantities of harvestable timber. The following community information is extracted directly out of the 1997 Tongass Land Management Plan EIS:

All [TLMP] alternatives should be able to provide habitat capability for deer hunted by Coffman Cove residents. In the long term, projected deer harvest for all rural hunters and all hunters

exceed 10 percent of capability. At some point, a restriction in hunting may be necessary. (1997 TLMP, Part 2, page 3-536).

All [TLMP] alternatives should be able to provide habitat capability for deer hunted by Craig residents. In the long term, projected deer harvest for all rural hunters and all hunters exceed 10 percent of capability. At some point, a restriction in hunting may be necessary. (1997 TLMP, Part 2, page 3-542).

All [TLMP] alternatives should be able to provide habitat capability for deer hunted by Hollis residents, all rural hunters and all hunters in the short term. However, in the long term, the projected deer harvest for all hunters exceeds 10 percent of habitat capability and all [TLMP] alternatives may have future inadequate habitat capability for the total deer hunted. At some point, a restriction in hunting may be necessary (1997 TLMP, Part 2, page 3-563).

All [TLMP] alternatives should be able to provide habitat capability for deer hunted by Hydaburg residents, all rural hunters and all hunters in the short term. However, in the long term, the projected deer harvest for all hunters exceeds 10 percent of habitat capability and all [TLMP] alternatives may have future inadequate habitat capability for the total deer hunted. At some point, a restriction in hunting may be necessary (1997 TLMP, Part 2, page 3-573).

All [TLMP] alternatives should be able to provide habitat capability for deer hunted by Klawock residents. In the long term, projected deer harvest for all rural hunters and all hunters exceed 10 percent of capability. At some point, a restriction in hunting may be necessary. (1997 TLMP, Part 2, page 3-601).

All [TLMP] alternatives should be able to provide habitat capability for deer hunted by Thorne Bay residents. In the long term, projected deer harvest for all rural hunters and all hunters exceed 10 percent of capability. At some point, a restriction in hunting may be necessary. (1997 TLMP, Part 2, page 3-664).

The analysis shown in Chapter 4 of this Project EIS is supported by the analysis shown above in the 1997 TLMP EIS. The conclusion stated above, "At some point, a restriction in hunting may be necessary.", supports the conclusion that any environmental analysis area within the northern portion of Prince of Wales area would have a similar chance of having a significant possibility of a significant restriction on subsistence resources for Sitka black-tailed deer. It should also be noted that significant restrictions on the black bear and furbearer subsistence resources currently exist on all or portions of the same area.

The analyses for ANILCA section 810 are shown in the Subsistence section of Chapter 4, in this EIS. The determinations made from the ANILCA section 810 analysis and findings will be a part of the Record of Decision for this project.

Forest Plan Implementation

Review of Available Volume

A review was conducted of each VCU for available volume. This analysis was based on computer inventories and Allowable Sale Quantity (ASQ) calculations used for the TLMP. All areas available for timber harvest under the 1997 TLMP can be expected to be entered for harvest sometime in the future if the plan is to be fully implemented. This analysis represents one scenario for meeting the average annual ASQ of 267 MMBF. Obviously, there can be other scenarios which harvest either more or fewer acres in the Project Area and still meet the ASQ. Harvest projections from this analysis for the Control Lake Project Area are shown in Table 1.

Table 2 displays the Tongass National Forest Sale Schedule for 1997 and the following five year period of fiscal years 1998 through 2002. As is shown in this schedule and the summary in Table 3, the timber volume projected to be offered from the Tongass is approximately 225 MMBF per year for the next five years, or about 42 MMBF less than the average annual ASQ of 267 MMBF. However, when sales with a high potential for challenge are factored in, the net probable sale offering for the next five years is approximately 123 MMBF per year. The Ketchikan Area portion of the ASQ for the next ten years is 102 MMBF on an average annual basis. See Appendix B of the 1997 TLMP for a more detailed discussion. It is currently projected that about 93 MMBF would be available for harvest under the Control Lake Project and that the volume would be offered in multiple sales, several in each of years 1998, 1999 and 2000. For those three years the average annual volume sold from this project would be about 27 MMBF per year, or approximately 27% of the Ketchikan Area's yearly ASQ.

Areas Suitable for Timber Harvest

The following is a listing and short description for the Ketchikan Area of existing and possible future timber sale project areas, made up of logical groupings of VCUs. This represents the majority of sites on the Ketchikan Area with suitable acres for timber harvest.

Central Prince of Wales EIS VCUs 557, 577, 579-590, 598-601, 549-554 and 571-574.

The FEIS and ROD for this project were completed in July 1993 with a selected alternative volume of 287 MMBF. Timber sale offerings have been made to KPC under the long-term contract for most of the volume.

North Revilla EIS VCUs 732, 733, 735-740

The Record of Decision for 205 mmbf was signed in August, 1993. Most of the volume in this project was sold in a system of offerings to KPC under the long-term contract. One small area was re-evaluated with an EA and sold under the independent timber sale program.

Polk Inlet EIS VCUs 610-613, 618-622, 624, 674, 675

The Record of Decision for this project was signed in April, 1995. The selected alternative had 112 mmbf of timber volume that has been offered to both KPC and as independent timber sales. The last of the sales from this project are scheduled to be sold in 1999.

Upper Carroll EIS VCUs 737, 744, 746

The ROD for this project was signed in October, 1996, with a selected alternative volume of 34 MMBF. All of this timber has been sold.

Lab Bay EIS VCUs 527-540, 551

A ROD for 42 MMBF was signed in January, 1997. Approximately 1/3 of this volume was sold in 1997. The project is now under litigation.

Control Lake EIS VCUs 574-578, 591-597

[This project.]

Chasina EIS VCUs 677-681

A DEIS was published in February, 1997 and a Final EIS is expected to be completed early 1998.

Sea Level EIS VCUs 746, 753, 755-757, 759

Scoping for this project has recently been completed and a DEIS is expected to be published in early 1998. The FEIS is expected in late 1998.

Cholmondeley EIS VCUs in Management Area K19

Scoping for this project has recently been completed and a DEIS is projected in 1998. The FEIS is projected for 1999.

Port Stewart EIS VCUs 713-717, 719, 722-723

The DEIS is projected to be completed in 1998 with the FEIS projected for 1999.

Moirs EIS VCUs 694, 695, 699, 700-704

This project is scheduled for field investigations and scoping in 1998. The DEIS is planned for 2000.

Dall Island EIS VCUs in Management Area K22

Scoping is scheduled in 2002 with the DEIS in 2003 and FEIS in 2004.

Sukkwon EIS VCUs in Management Area K21

Scoping is scheduled in 2002 with the DEIS in 2003 and FEIS in 2004.

Gravina EIS VCUs in Management Area K41

Scoping and the DEIS are scheduled in 2000 with the FEIS projected in 2001.

Note that several sales on the schedule in Table 2 have not been listed above, including Luck Lake, Staney, North Thorne, Fire Cove, and Sunny Cove. These projects are located within the boundaries of the projects listed above.

DEIS

Reasons for Scheduling the Control Lake Project for Environmental Analysis

In addition to the Control Lake Project Area's relative ability to provide timber, other factors considered in scheduling it for environmental analysis at its projected timber volume level included:

- 1) This harvest level is consistent with the 1997 TLMP.
- 2) Sufficient volume has been determined to be available in the project area.
- 3) The number and location of Log Transfer Facilities, or other processing facilities, are sufficient to handle this volume of timber within a three year time frame.

Substantial changes in timber demand or other circumstances could affect the rate at which various areas proceed through the NEPA process or the timing of actual timber sale offerings, but these changes are not expected to alter the sequence for initiating and completing the NEPA process for various areas. Time periods of relatively low market demand provide an opportunity to increase available timber supply in anticipation of cyclical higher demand periods. All areas in which commercial timber harvest is authorized under the TLMP are expected to receive some level of timber harvest at some time if the Forest Plan is to be fully implemented. Total environmental impacts viewed in the long term are not expected to differ substantially depending upon the order in which different areas are entered. The "No-Action" Alternative of not proceeding with further harvest at the present is considered in detail in each timber sale project NEPA process. But generally, projects farthest along in the NEPA process are the most efficient and logical to consider for implementation first in order to meet timber supply, timber sale program, and Forest Plan objectives.

Table 1
 TLMP Projected Acres of Harvest by Decade
 for the Project Area VCUs

Acres by Decade					
	1	2	3	4	5
VCU					
574	120	40	120	0	0
575	59	253	59	80	0
576	0	0	0	0	0
577	957	180	1438	981	0
578	440	120	319	320	0
591	205	20	116	0	0
592	0	0	0	0	0
593	114	278	82	309	101
594	271	581	271	453	472
595	220	542	220	521	117
596	73	72	72	72	79
597.1	168	0	60	32	0
597.2	862	80	280	940	0
Total	3489	2166	3037	3708	769

Table 2
Tongass National Forest Timber Sale Schedule for Fiscal Years 1998-2003

NEPA Project	Sale Name	Volume (MMBF)
Chatham Area		
FY 98		
NW Baranof	Schultz Cove	10.9
NW Baranof	St. Johns	9.3
FY 99		
NW Baranof	Lisa Creek	6.0
8-Fathom	Neka I	9.0
	Small Sales	2.5
FY 00		
Ushk Bay	Poison Cove	19.1
Indian River	Indian River	14.0
	Small Sales	1.0
FY 01		
Port Houghton	Little Lagoon	26.0
Indian River	Ten Mile	7.0
	Small Sales	2.0
FY 02		
8-Fathom	Neka 2	5.0
Finger Mtn.	Crab Bay 1	14.2
Finger Mtn.	Broad Creek	12.4
	Small Sales	2.0
FY03		
Ushk Bay	Ushk Bay 1	14.1
Port Houghton	North Houghton	11.0
Finger Mtn.	Inbetween	6.1
	Small Sales	2.0
Stikine Area		
FY98		
Shamrock	Clover	12.0
Etolin	Etolin	2.2
Turn	Turn	1.7
Crane and Rowan	Rowan Mountain	16.0
Crane and Rowan	Crane	7.0
Todahl Backline	Todahl Backline	6.0
Twin Creek	Twin Creek	3.0
Canal/Hoya	Canal/Hoya	15.0
Nemo Loop	Nemo Loop	3.0
Swan/Tyee Powerline	Powerline	5.0
Mossy	Mossy	0.25
South Lindenberg	Dakota	0.33
South Lindenberg	S.Lindy Small Sale 1	1.0
South Lindenberg	S.Lindy Small Sale 2	1.0
South Lindenberg	S.Lindy Small Sale 3	1.0
Bohemia Mountain	Bo	0.7
FY 99		
Houghton/Fanshaw	Fanshaw 1	31.0
Crystal Creek	Crystal Creek	10.0
South Zarembo	Skipping Cow	25.0
Deer Island	Kuakan	17.0
Wrangell Misc Small	WRD Small Sales	2.0

Table 2 (cont.)

Tongass National Forest Timber Sale Schedule for Fiscal Years 1998-2003

NEPA Project	Sale Name	Volume (MMBF)
FY 00		
South Lindenberg	South Lindy I	2.0
Madan	Madan	25.0
King George	Honeymoon	2.0
South Lindenberg	South Lindenberg II	10.0
Woodpecker	Woodpecker	10.0
East Kuiu	Kuiu I	22.0
Etolin	Camp Carl	1.0
Wrangell Misc Small	WRD Small Sales	1.0
Shamrock	Shamrock Small Sales	2.0
FY 01		
Douglas	Douglas I	39.0
Frenchy	Frenchy	3.0
Woodpecker	Track	5.0
Etolin	Mosman	15.0
Woronkofski	Woronkofski	10.0
Wrangell Misc Sales	WRD Small Sales	1.0
South Lindenberg	South Lindy Small Sale	1.0
South Lindenberg	South Lindy II	2.0
FY 02		
Etolin	Whaletail	15.0
Sunny Bay	Sunny Bay	10.0
East Kuiu	Kuiu II	40.0
Sumner	Sumner	6.0
Wrangell Misc Sales	WRD Small Sales	5.0
South Lindenberg	South Lindy Small Sale	1.0
South Lindenberg	South Lindy III	2.0
FY 03		
East Kuiu	Kuiu III	20.0
Scott Peak	Scott Peak	15.0
Overlook	Overlook	5.0
Crystal Creek	Ess Lake	5.0
Etolin	Olive Cove	10.0
Back Channel	Back Channel	10.0
South Lindenberg	South Lindy IV	2.0
South Lindenberg	South Lindy Small Sale	1.0
South Lindenberg	South Lindy Small Sale	1.0
Wrangell Misc Sales	WRD Small Sales	2.0
Petersburg Misc Sales	PRD Small Sales	2.0
Ketchikan Area		
FY 98		
Cloudy	Cloudy	2.0
KRD LYD	KRD LYD	0.1
Brand X	Brand X	1.8
Craig Small Sales	Craig Small Sales	0.4
Peep Flock	Peep Rock	1.5
Polk EIS	Cable Drop	11.1
Chasina EIS	Dumpy ATC	12.0
Picasso	Picasso	0.6
TB Small Sales EA	TB Small Sales	6.1
Lab Bay EIS	Big Bob	9.8

Table 2 (cont.)

Tongass National Forest Timber Sale Schedule for Fiscal Years 1998-2003

NEPA Project	Sale Name	Volume (MMBF)
Lab Bay EIS	Summit/Exchange	16.0
Control Lake EIS	Wolf Pup	1.5
Control Lake EIS	North Thorne	2.3
Control Lake EIS	Big Salt	13.2
Control Lake EIS	West Steel	0.2
Control Lake EIS	Hard Steel	7.4
Control Lake EIS	Lwr Beaver	0.1
Control Lake EIS	Muskrat	0.4
Control Lake EIS	Rio Beaver	4.8
Control Lake EIS	Rush Peak	1.0
Control Lake EIS	Rush/Angel	6.5
Control Lake EIS	Gander	5.2
Control Lake EIS	Beaver Pond	0.3
FY 99		
KRD Small Sales EA	Small Sales	0.5
Sea Level EIS	Toe-Dance	10.0
Sea Level EIS	Madder	10.0
Sea Level EIS	Ten Pin	10.0
Polk Inlet EIS	Longline	2.9
Polk Inlet EIS	Lowboy	1.1
Chasina EIS	South Arm	7.9
Chasina EIS	Port Johnson	11.0
Chasina EIS	North	7.5
LYD & Small Sales	LYD & Small Sales	2.0
TB Small Sales EA	TB Small Sales	5.0
Control Lake EIS	Steel/Roberts	3.9
Control Lake EIS	Logjam	1.8
Control Lake EIS	Kogish	7.5
Control Lake EIS	Control Lake B	10.0
FY 00		
Sea Level EIS	Orion	20.0
Craig Small Sales EA	Craig Small Sales	2.0
Cholmondeley EIS	Sunny Cove	14.0
Cholmondeley EIS	Dr. Point	15.7
TB Small Sales EA	TB Small Sales	5.0
Lab Bay EIS	Thorne Island	3.5
Control Lake EIS	Control Lake A	12.0
Staney EIS	Staney Creek 1	10.0
Luck Lake EA	Luck Lake 1	5.0
Luck Lake EA	Luck Lake 2	8.0
FY 01		
Port Stewart EIS	Mongoos	30.0
Craig Small Sales EA	Craig Small Sales	2.0
Cholmondeley EIS	Skowl	6.7
Moirs EIS	Perkins	23.0
TB Small Sales EA	TB Small Sales	5.0
Staney EA	Staney Creek 1	10.0
Staney EA	Staney Creek 2	15.0
Cedar Decline EA	Cedar	5.0
FY02		
Port Stewart EIS	Cabala	20.0
Gravina EIS	Dutchman	8.0

Table 2 (cont.)

Tongass National Forest Timber Sale Schedule for Fiscal Years 1998-2003

NEPA Project	Sale Name	Volume (MMBF)
Gravina EIS	Palisade	7.0
Craig Small Sales	Craig Small Sales	2.0
Moiria EIS	Black	11.3
Moiria EIS	Frederick	11.0
N Dall EIS	Dall	10.0
Control Lake EIS	Control Lake C	9.6
North Thorne EIS	Thorne 1A	4.6
North Thorne EIS	Thorne 2	5.0
Kosciusko Old Growth EIS	KOS 1	8.0
Kosciusko Old Growth EIS	KOS 3	3.0
FY 03		
Port Stewart EIS	Forreous	25.0
Gravina EIS	Frier	5.0
Gravina EIS	Fling	5.0
Craig Small Sales EA	Small Sales	2.0
Scratching EIS	Santa	24.0
Droppings EA	Drops	10.0
Thorne Bay Small Sales EA	Small Sales	5.0
North Thorne EIS	Thorne 1B	3.5
North Thorne EIS	Thorne 3	5.0
North Thorne EIS	Thorne NIC2	5.0
Kosciusko Old Growth EIS	KOS 2	4.0
Kosciusko Old Growth EIS	KOS 4	5.0
Red Bay EA	Red 1	3.0
Red Bay EA	Red 2	1.0
Red Bay EA	Red 3	1.0
Sarkar EIS	Sarkar 1	6.0

Table 3

Timber Sale Schedule Summary - Volume (MMBF) by Fiscal Year

	FY 97	FY98	FY99	FY00	FY01	FY02	FY 98-02 Ave.
Chatham Area	64	46	43	44	40	44	43
Stikine Area	58	72	88	86	79	79	81
Ketchikan Area	84	102	104	96	97	104	101
Tongass NF	206	220	235	226	216	228	225

Appendix B

Responses to Comments on the Supplemental Draft EIS

Appendix B

Response to Comments on the Supplemental Draft EIS

Comments received from the public and other interested parties during the public comment period on the Supplemental Draft EIS are summarized in the following table.

Comment	Response
Comment 1: The Supplemental Draft EIS does not provide sufficient information regarding the proposed project's impacts on the environment.	The Supplemental Draft EIS provides a detailed analysis of the proposed project's impacts on the environment, including a discussion of the project's potential effects on the local economy, the environment, and the community. The Supplemental Draft EIS also includes a detailed discussion of the project's potential effects on the local economy, the environment, and the community.
Comment 2: The Supplemental Draft EIS does not provide sufficient information regarding the proposed project's impacts on the local economy.	The Supplemental Draft EIS provides a detailed analysis of the proposed project's impacts on the local economy, including a discussion of the project's potential effects on the local economy, the environment, and the community. The Supplemental Draft EIS also includes a detailed discussion of the project's potential effects on the local economy, the environment, and the community.
Comment 3: The Supplemental Draft EIS does not provide sufficient information regarding the proposed project's impacts on the environment.	The Supplemental Draft EIS provides a detailed analysis of the proposed project's impacts on the environment, including a discussion of the project's potential effects on the local economy, the environment, and the community. The Supplemental Draft EIS also includes a detailed discussion of the project's potential effects on the local economy, the environment, and the community.

Responses to Comments

This section of Appendix B includes the written correspondence received on the Supplemental Draft EIS. Forest Service responses to substantive comments included in written correspondence are provided directly following the appropriate piece of correspondence.

Availability of the Supplemental Draft EIS was announced in the Federal Register on January 30, 1998, with a deadline for public comment listed as March 16, 1998. Copies of the Supplemental Draft EIS were mailed to all on the project mailing list. Notices of the availability of the Supplemental Draft EIS were placed in the *Ketchikan Daily News* and the *Island News*. These notices also announced the schedule of public open houses. Additional notices to radio stations and newspapers in the region were issued.

Approximately 69 individuals, organizations, and agencies submitted written comments on the Supplemental Draft EIS.

The comments printed in this appendix are organized into three groups. Agency letters are listed first, followed by letters from organizations, and then letters from individuals. Substantive comments within each letter have been coded and numbered to aid the reader in finding the Forest Service response to individual comments. In several cases, a number of letters were received that contained substantially similar comments. Similar letters were grouped together and one or two representative letters are reprinted in this appendix in each case. The names of the authors of the other letters in each group are identified and cross-referenced with the appropriate Forest Service responses.

Following is a listing of the comment letters provided in the subsequent pages. The author of the letter is listed together with the comment codes and the beginning page number of the letter.

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Mike Tuffy (?)	Thorne Bay, AK	See JD	133
Susan E. Walsh	Ketchikan, AK	See PSVW	155
Chris Webb	Thorne Bay, AK	See PSVW	155
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Kathi Wineman	Juneau, AK	See PSVW	155
J. Worlsey	Cambridge, MA	See PSVW	155
Elizabeth Zimmerman	Santa Clara, CA	See PSVW	155



CITY OF THORNE BAY

P. O. BOX 19110
THORNE BAY, ALASKA 99919
(907) 828-3380
FAX (907) 828-3374

Mr. Brad Powell
Forest Supervisor
Federal Building
Ketchikan, Alaska 99901

Re: Control Lake Draft EIS

Dear Mr. Powell:

This letter is the official position statement of the Thorne Bay City Council regarding the Control Lake Draft EIS.

The Thorne Bay City Council supports Alternative 11.

Thorne Bay is the most affected community both economically and environmentally.

Thorne Bay has possibly the largest industrial park in southeast Alaska. This park is in the developing stage. Most operators are building wood product-related type businesses, and would benefit from the larger volume of Alternative #11.

The Control Lake Citizens Alternative #10 has small volumes that could be bought up by larger established SBA mills both on and off of POW having little or no positive financial impact in our community. Their main objection to Alternative #11 is that there are too few small units for the smaller operators. This concern is already covered by an existing, additional program on the Thorne Bay Ranger District. That program provides 5-6 MMBF of sales for these mills.

The Forest Service preferred Alternative #11 is, for the most part, able to be harvested under TLMP and replacement volume that is as economically accessible to our mills likely is years off.

Mills need secure volumes that they can take to the bank.

Thank you for the opportunity to comment.

Sincerely,

Lynda F. Brown

Lynda F. Brown, Mayor
On Behalf of the Thorne Bay City Council

Cc: All City Council Members

USDA FOREST SERVICE
KETCHIKAN AREA
RECEIVED

APR - 2 '98

March 26, 1998

FOREST SERVICE		
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	MISTY FIELDS	
	THORNE BAY	
	OTHER	

COTB-1

COTB-2

COTB-3

Responses to City of Thorne Bay

- COTB-1** Your support of Alternative 11 is noted.
- COTB-2** Your comment regarding the Thorne Bay Ranger District small sales program is noted. See also response to SEAC-1.
- COTB-3** The concepts included in Alternative 11 were important in developing the Selected Alternative.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

SOUTHEAST REGIONAL OFFICE HABITAT AND RESTORATION DIVISION

TONY KNOWLES, GOVERNOR

P.O. BOX 240020
DOUGLAS, AK 99824-0020
PHONE: (907) 465-4292
FAX: (907) 465-4272

March 16, 1998

Mr. Bradley Powell
Forest Supervisor
Tongass National Forest, Ketchikan Area
Attn: CONTROL LAKE SDEIS
Federal Building
Ketchikan, AK 99901

Dear Mr. Powell:

The Alaska Department of Fish and Game (ADF&G) has reviewed materials provided by the USDA Forest Service (FS) requesting review of the January 1998 Control Lake Timber Sales Supplemental Draft Environmental Impact Statement (SDEIS). We offer the following in response to your request for submittal of comments by March 16, 1998. These comments will focus primarily on issues that may be addressed under the National Environmental Policy Act (NEPA), National Forest Management Act (NFMA), and Alaska National Interest Lands Conservation Act (ANILCA). These and other Alaska Coastal Management Program (ACMP) issues will be addressed in further detail during the ACMP consistency review process, pending a consistency determination by the FS. Several issues germane to the consistency determination are still undergoing interagency and/or internal FS review. ADF&G does not expect to be able to concur that the project is consistent until final decisions are made on these issues.

According to the Summary, the SDEIS was prepared to respond to several changes since the October, 1995 publication of the Control Lake Draft EIS (DEIS), including 1) cancellation of the Ketchikan Pulp Company (KPC) long-term contract; 2) closure of the KPC pulp mill; 3) release of the 1997 Tongass Land Management Plan (TLMP); 4) public and agency input on the DEIS; and 5) several new or revised analyses.

The SDEIS offers four alternatives for review, ranging from no action to harvest of 113 million board feet (MMBF) in the Control Lake Project Area. Under Alternative 11, identified as the preferred alternative, the Forest Service proposes to harvest an estimated 94 MMBF of timber, construct or reconstruct an estimated 78 miles of roads, and use existing log transfer facilities at Thorne Bay, Coffman Cove, and other locations. Timber sale offerings would be made available to the Independent Timber Sale Program.

Mr. Bradley Powell
March 16, 1998

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Control Lake Timber Sales SDEIS
NEPA Comments

Purpose and Need

Reflecting the changes in conditions since release of the DEIS, the Purpose and Need statement in the SDEIS is substantially different from that in the DEIS. We commend the FS for seeking to respond to more generalized goals and objectives relating to timber production, market demand, and employment rather than to meet a specific volume. In the spirit of collaborative stewardship endorsed by the 1997 TLMP, however, we believe that these goals may not be broad or inclusive enough to allow application of the tenets of Ecosystem Management as described on page 2-4. These goals also may limit the ability of the FS to fully implement the multiple use and viable population mandates of the NFMA, or to allow our agency to conserve and manage renewable fish and wildlife resources and their habitats on the sustained yield principle. We understand that recent direction from the Chief of the FS emphasized watershed restoration and maintenance as the over-riding priority of forest planning and management. We urge the FS to incorporate goals, consistent with TLMP, relating to protection of additional resources including fish, wildlife, and watersheds into the Final EIS (FEIS).

ADFG-1

Information Needs and Corrections

Species of Concern and Other Species. Although the action alternatives described in the SDEIS were "designed to be consistent with the 1997 TLMP" (page iii), the document does not reflect substantial changes in information and analyses that have become available since the publication of the DEIS. In particular, the information presented in the Affected Environment and Environmental Consequences chapters on several US Fish and Wildlife Service (FWS) species of concern is very dated. As a result of this lack of information, it is difficult to evaluate whether measures proposed in the SDEIS meet the 1997 TLMP Standards and Guidelines (S&Gs) for these species. The FEIS should be updated to include information and analyses from the conservation assessments for the Alexander Archipelago wolf, northern goshawk, and marbled murrelet that were prepared as part of the TLMP revision process, as well as descriptions of the more recent legal actions relating to these species.

ADFG-2

We believe Unit 595-424, shown as included in Alternative 11, was supposed to be deleted both because of concerns about steep slopes; it is also relatively close to a peregrine eyrie, one of very few in southeastern Alaska not located directly on the coast. Another species for which updated material is needed is the Prince of Wales spruce grouse, referred to in the SDEIS as "Franklin's grouse," which has been the subject of a multi-year research project by a FS biologist.

ADFG-3

ADFG-4

Alexander Archipelago Wolf. In the References chapter, only one (misspelled: "Pearson") listing occurs of a progress report from David Person's (University of Alaska Fairbanks) Alexander Archipelago wolf ecology project, which focused on the Control Lake project area, although a more recent report is referred to in the text. In the "Gray Wolf" section under Environmental Consequences (page 4-81), the SDEIS states "No units are proposed for harvest in the vicinity of known wolf dens." Unit 595-431 contains a known wolf den used by a radio-collared wolf (D. Person, pers. comm.). Person also recommended deletion of all units in Value Comparison Unit (VCU) 577 except -416, -417, -418, and -423 because of their importance to the Honker Divide pack.¹ Wolf timing restrictions (i.e., Mitigation Measure W12; page 4-91) provides limited protection for wildlife from human disturbance both during and after harvest operations, in contrast to the intent stated on page 4-90 of the

ADFG-5

¹ June 7, 1996, letter to Acting Thorne Bay District Ranger Charley Streuli

Mr. Bradley Powell
March 16, 1998

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Control Lake Timber Sales SDEIS
NEPA Comments

SDEIS. As Person also pointed out, timing restrictions "do nothing to preserve deer density which will ultimately determine whether wolves use a denning area."

Sitka Black-tailed Deer. Because Sitka black-tailed deer habitat capability is important not only for analyses of project effects on deer but also on wolves and subsistence harvests, we are concerned that the SDEIS uses an outdated version of the deer habitat capability model. ADF&G does not believe that extrapolation of results from the Lab Bay Sale is adequate. The deer model has undergone substantial changes since publication of the DEIS, and subsistence deer hunting is extremely controversial in the project area at present. It is important that the FEIS display the results of the most recent, interagency deer model, in order to make use of the most recent scientific information as required in the 1997 TLMP. Analyses of deer habitat capability also must reflect the additional information provided by Person and other authors of the wolf conservation assessment² regarding needed corrections to assumptions made in TLMP about deer densities sufficient to provide for both wolves and harvest by humans. If the objective is to assure a reasonably high probability of maintaining the current density of wolves, an appropriate deer density would be about 18 deer per square mile, not 13 as stated in TLMP, or 5 as stated in the SDEIS.

ADF&G - 6

Class III Streams and Watershed Analysis. Components of a Watershed Analysis as described in the 1997 Watershed Analysis Handbook are contained within the SDEIS, but no analysis has been completed. Participants in a February 10, 1998, meeting about the Control Lake sale were told that 1997 TLMP Process Group stream buffers would be applied to all Class III streams in the selected alternative, without waiting for completion of a Watershed Analysis. The ADF&G requests inclusion of a full Watershed Analysis for the project area as part of the FEIS, as well as full documentation of FS plans to implement Process Group buffers on Class III streams.

ADF&G - 7

Maps. Some maps in the SDEIS are out of date, which can lead to confusion or misinformation. For example, the Map of Landscape Zones (page 2-9) shows the Kogish Mountain Late-successional Zone connecting to an "Old-growth Block outside [the] Project Area." This block corresponds roughly with the Twin Mountain medium Old-Growth Reserve (OGR) in the 1997 TLMP, but the southern lobe shown in the SDEIS map is no longer connected to the OGR; instead, this lobe is designated as Modified Landscape in the 1997 TLMP, a timber production Land Use Designation (LUD) rather than a non-development LUD. All maps in the FEIS should be updated to reflect 1997 TLMP LUDs.

ADF&G - 8

Road and Unit Cards. The SDEIS included only unit cards that were substantially modified. ADF&G will require road and unit cards that are updated to show stream crossings and proposed closure status (including the specific type of closure) prior to evaluating concurrence with ACMP consistency. The required information and process for submittal of information can be found in the current draft of the FS/ADF&G Regarding Fish Habitat and Passage.

ADF&G - 9

Category 3 Timber Sale Issues

The Record of Decision (ROD) for the TLMP identified Control Lake as a Category 3 timber sale project, requiring that it be consistent with all the applicable management direction of the new plan

ADF&G - 10

² September 19, 1997 letter from D. Person, M. Kirchhoff, V. VanBallenberghe, and R. T. Bowyer to Beth Pendleton and the TLMP planning team.

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NEPA Comments

except for certain new S&Gs for wildlife (i.e., landscape connectivity, endemic terrestrial mammals, northern goshawk, and American marten), which need to be implemented to the extent that they "avoid some possible long-term cumulative effects without disrupting timber sale projects currently being planned" (TLMP ROD, page 41), and "implemented in a manner that is least disruptive to the design and implementation of the project." (SDEIS, page 4-90). We commend the FS for requiring interagency collaboration, including input from ADF&G, in the implementation process for these new S&Gs. We want to continue to work with the FS to ensure that the intent of the ROD for protection of these resources is fully met.

ADFG - 10

Landscape Connectivity. As part of the Tongass Plan Implementation Team (TPIT) and Category 3 timber sale implementation processes, ADF&G expressed concerns about connectivity in two portions of the Control Lake project area: north-south connectivity through the Rio Roberts watershed, and east-west connectivity between the Honker Divide large OGR and the Twin Mountain OGR, in the Staney timber sale project area.

The 7,170-acre Rio Roberts Watershed is designated as Landscape Zone 10 in the SDEIS, where it is identified (page 2-6) as "essentially unharvested and unroaded old-growth habitat, [that] could serve as a control watershed, and [that] contains the Rio Roberts Late-successional Corridor." This 2,791-acre corridor "connects the Honker Block with the western portion of the Karta Wilderness Block to the south." The Rio Roberts Watershed is included in a list of areas where the majority of sightings and signs of wolves were observed during field reconnaissance for the Control Lake project (page 3-87). Telemetry data from the wolf ecology study indicate this area is important for wolf dispersal on Prince of Wales Island. A population viability analysis of wolves on the island³ completed in 1997 by Person for FWS, relied in part on the assumption of an intact corridor between the Honker Divide OGR and Karta Wilderness. ADF&G also identified this area in our December 12, 1995, comments on the Control Lake DEIS as an important corridor for wolves and other species. We believe inclusion of units 596-410, -416, -417, and -418 and associated roads within this watershed would substantially decrease its value as a corridor. Even if the proposed road were "closed" after harvest, it would still represent an additional mortality risks and habitat and prey losses for dispersing individual, an already vulnerable portion of the wolf population. We request these units be deleted from the sale, and that the western boundary of the Rio Roberts small OGR be moved to make it conterminous with the Honker OGR. We believe this request is also in keeping with the recent emphasis on watershed restoration and maintenance for FS management. We would be willing to discuss alternative units elsewhere in the project area as replacement volume for these deleted units.

ADFG - 11

East-west connectivity is also a concern in the project area. We request that the FS modify or drop Unit 595-412 to create a 1,000-foot corridor between the Honker OGR and the Election Creek small OGR, to maintain the integrity of the Kogish Mountain Late-successional Corridor. This zone is identified in the SDEIS (page 2-7) as connecting "the old-growth and late-successional habitats in the eastern portion of the Project Area with those in the western portion." This area was also identified as an "important Old-Growth Block" in the Central Prince of Wales Final EIS (page 3-13). In addition, harvest of unit 595-412 would "substantially reduce and bisect a 140-acre patch of high quality habitat"

³ Person, D. K. and R. T. Bowyer. 1997. Population Viability Analysis of Wolves on Prince of Wales and Kosciusko Islands, Alaska. Final Report to the US Fish and Wildlife Service.

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March 16, 1998

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Control Lake Timber Sales SDEIS
NEPA Comments

for Sitka black-tailed deer (Control Lake SDEIS, page 4-80). Adequate width of landscape corridors is still the subject of interagency discussion, but our review of the scientific literature indicates that even 1,000 feet may not be sufficient. We would accept 1,000 feet as a corridor in this instance because it would be consistent with the 1997 TLMP beach fringe buffer, which is also expected by the FS to provide connectivity.

ADFG
-11

Marten Standards and Guidelines. ADF&G requests that the adjustments outlined in the SDEIS cover letter relating to the application of marten S&Gs in VCU 597.2 be reflected in the text of the FEIS. These modifications reflect interagency TPIT and Category 3 Timber Sale discussions, and are not mentioned in the text of the SDEIS.

ADFG
-12

Honker Divide

ADF&G remains concerned about Honker Divide and maintaining existing wildlife and fisheries habitat in the watershed ridge-top to ridge-top. We note that many public interests on Prince of Wales Island, including the Southeast Federal Subsistence Regional Advisory Council, have endorsed the "Citizens' Alternative" (Alternative 10), which defers logging in VCU 575 because of Honker Divide's importance in maintaining community use of fish and wildlife on central Prince of Wales Island.

ADFG
-13

Consequently, we ask that timber harvest in VCU 575 be deferred and the existing road in VCU 575 effectively closed to all traffic until a forest-wide review of the old growth habitat strategy (as required by TLMP in five years) is completed and it can be determined how the new forest plan meets the need for community use of fish and wildlife on central Prince of Wales. A deferral would preserve options for changing OGR boundaries in the Control Lake area if a better configuration would provide both habitat protection and economical access to timber by local, independent, small logging operators.

Honker Divide, including VCU 575, was identified by the Governor's Office as one of four areas on the Tongass of high public concern. ADF&G believes a deferral of logging in the controversial Honker Divide VCU 575 is the best way to address Governor Knowles' request to "avoid timber harvest in areas of high community concern and important fish and wildlife habitat."

Roads and Access Management

ADF&G is pleased to see the emphasis in the SDEIS on keeping this very important issue in the public eye by highlighting the topic in the cover letter and including a map and proposal for post-harvest road closures. We commend the FS for the effort being put into a comprehensive Access Management plan for the Thorne Bay Ranger District. We also appreciate the cooperative atmosphere that has resulted in our inclusion in this process, and look forward to continued interagency consultation on this issue. Our concerns focus on subsistence hunting, as well as the potential effects of road maintenance levels on sedimentation of fish habitat. In addition, our concerns about legal and illegal wolf mortality along roads accessible to the public have increased as a result of recent increases in trapping pressure along the Prince of Wales road system.

ADFG
-14

ANILCA Section 810 - Subsistence

The SDEIS lists six communities with the potential to be substantially affected by the proposed action. According to the SDEIS, from 14 to 66 percent of these communities' deer harvest comes from the

ADFG
-15

Mr. Bradley Powell
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Control Lake Timber Sales SDEIS
NEPA Comments

project area. The document states (page 4-145) "All of the action alternatives would create a significant possibility of a significant restriction of subsistence use of Sitka black-tailed deer by the residents of most local communities after project implementation and through the reasonably foreseeable future if non-rural harvesting is not restricted...Cumulative timber harvest in Project Area WAAs is expected to create a significant possibility of a significant restriction, even with restriction of non-rural harvest, at some point in the future." ADF&G requests that the FEIS include an analysis of project effects on all human users, including rural and non-rural.

ADF&G-15

High Community Use VCUs

Of the 12 VCUs in the project area, all but three were recommended by the State in comments to the FS during the TLMP revision process for protection as Community Use Areas. VCUs 574, 575, 576, 577, 578, 592, and 593 were rated by the ADF&G as being in a category having the highest fish and/or wildlife resource values, and VCUs 591 and 596 were ranked among the third highest for community fish and wildlife values.

ADF&G-16

The August 26, 1996, State comments to Regional Forester Phil Janik on the Revised Supplemental Draft Tongass Land Management Plan included the following comment: "...Avoiding or minimizing timber harvest in areas of high community use will increase the predictability and reliability of the timber supply and ensure the viability of all forest dependent industries."

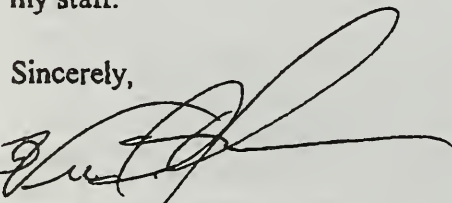
Alternative 10

On the basis of the analyses contained in the SDEIS, Alternative 10 – the "Citizens' Alternative" – appears to minimize adverse effects to fish and wildlife habitat, as well as subsistence and recreational hunting. ADF&G generally supports the goals of this alternative, although we may request some modifications to the unit pool and review of road management objectives.

ADF&G-17

Thank you for the opportunity to comment on the Control Lake Timber Sales SDEIS. As previously noted, ADF&G expects to comment in further detail on these and other ACMP issues as part of the ACMP consistency review. If you have any questions or need further information, please contact me or my staff.

Sincerely,



William A. Hanson
Regional Management Coordinator

cc: Moira Ingle, ADF&G, Klawock
Tom Paul, ADF&G, Douglas
Doug Larsen, ADF&G, Ketchikan
Kevin Hanley, DEC, Juneau
Steve Brockmann, FWS, Ketchikan

Responses to Alaska Department of Fish and Game

- ADFG-1** Comment noted.
- ADFG-2** The Final EIS has been updated to better reflect new information, especially in relation to the Forest Plan and species noted.
- ADFG-3** Unit 595-424 has been deleted in the Final EIS.
- ADFG-4** The Prince of Wales spruce grouse information has been updated in the Final EIS.
- ADFG-5** The Final EIS has been updated in relation to wolves. The wolf using the den in Unit 595-431 is no longer alive. The unit will be implemented in accordance with Forest Plan Standards and Guidelines for wolves. Units 577-431 and 432 are included in the Selected Alternative.
- ADFG-6** The Final EIS uses the most recent Forest Plan deer model. Note that the deer density within the Project Area exceeds 15 deer per square mile.
- ADFG-7** As noted in the Supplemental Draft EIS and at the meeting referred to, the components of watershed analysis identified in the Forest Plan have been accomplished throughout the completion of the Control Lake EIS. A stand alone watershed document was not prepared as it would have been duplicative and was not expected to yield any new information that would alter the alternatives. All Class III streams will be buffered in accordance with Forest Plan Standards and Guidelines.
- ADFG-8** The landscape zones were part of the ecosystem approach used early in the planning process. These are referenced back to the Draft and Supplemental Draft EIS and are not included in the Final to minimize confusion as suggested.
- ADFG-9** Updated unit and road cards are included in Volume II of the Final EIS.
- ADFG-10** Comment noted.
- ADFG-11** Units 596-410, 416, 417 and 418 have been deferred in the Selected Alternative. Unit 595-412 has been modified to assure at least 1,000 feet of unharvested land remains between the southern boundary of the unit and the property boundary.
- ADFG-12** The Final EIS has been updated to reflect marten and goshawk Standards and Guidelines.
- ADFG-13** Timber harvest in VCU 575 has been deferred in the Selected Alternative and the road closed as suggested.
- ADFG-14** Comment noted.
- ADFG-15** The subsistence analyses includes effects on rural and non-rural users.
- ADFG-16** The Selected Alternative provides for a beneficial mix of resources for the public within the framework of the existing laws, regulations, policies, public needs and desires, and capabilities of the land.
- ADFG-17** Comment Noted.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
JUNEAU REGULATORY FIELD OFFICE
JORDAN CREEK CENTER
8800 GLACIER HWY, SUITE 106B
JUNEAU, ALASKA 99801-8079

February 20, 1998

Regulatory Branch
East Section

Mr. Dave Arrasmith
USDA Forest Service
Tongass National Forest
Ketchikan Area
Federal Building
Ketchikan, Alaska 99901

Dear Mr. Arrasmith:

These comments are submitted in response to the January, 1998, Supplemental Draft Environmental Impact Statement (SDEIS), for the Control Lake Timber Sale, On Prince of Wales Island. On January 17, 1996, we provided comments to the original Draft Environmental Impact Statement, and we have reviewed your response which is included in Appendix B. Some of the issues raised have not been adequately addressed and will be restated below. The Corps of Engineers is responsible for determinations concerning Department of the Army (DA) permit requirements, and our comments are presented as a regulatory agency as opposed to a commenting agency. As such, the requirements detailed below are requirements of Federal law and/or regulation.

- Corps of Engineers (Corps) Jurisdiction: Based on information provided in the DEIS, we concur that wetlands and waters which are under the Corps' regulatory jurisdiction occur within the project area. Our regulatory authorities that relate to timber harvest operations are based on two laws: Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) prohibits the obstruction or alteration of navigable waters of the United States (U.S.), and Section 404 of the Clean Water Act (33 USC 1344) prohibits the discharge of dredged or fill material into waters of the U.S., including wetlands, without a DA permit.
- Wetland Impacts: The SDEIS states on pages 2-27 and 2-30 that from 170 to 533 acres of wetlands would be impacted by road construction activities, which would require between 83 to 258 stream crossings, depending on which action alternative is selected. Table 4.21

USDA FOREST SERVICE KETCHIKAN AREA RECEIVED		
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FOREST SUPERVISOR OFFICE		
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	FS SECRETARY	
	ADMIN	
	ECO	
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	PLANNING/IRM	
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	TIMBER	
	CRAIG RD	
	KETCHIKAN RD	
	MISTY FIORDS NM	
	THOONE BAY RD	
	OTHER	

ACOE - 1

ACOE - 2

reflects that from 6.8 to 25.8 miles of road would be constructed across "muskeg" vegetation, depending on the alternative selected and that from 9.0 to 22.3 miles of road would be constructed across Western Hemlock/Western Red Cedar plant communities (which can be associated with forested wetlands).

Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include "muskegs", Pacific Coast (e.g., forested) swamps, marshes, bogs, and similar areas. Page 3-22 states that "streams and rivers are also considered wetlands", however, although these areas are waters of the U.S., they would not be considered wetlands unless they meet the above definition.

ACOE-2

- Clean Water Act 404(f) Exemptions: Appendix B states on page 29 that "recreation use of proposed roads would be incidental to ongoing silvicultural activities and that the initial construction of roads to provide safe use will fall under the silvicultural exemption under Section 404". On page 4-117, the SDEIS states that three classes of road would be constructed (arterial, collector, and local roads), and that arterial and collector roads are generally mainline system roads requiring higher standards and heavier investment to provide *prolonged multiple use*, although the roads can be built to lower standards initially and upgraded as use is intensified. On page 4-182, the SDEIS states that several roads near the lower Thorne River would remain open and would permit roaded access to recreation resources that had been previously inaccessible by vehicle.

ACOE-3

Section 404(f)(1)(e) (33 CFR 323.4(a)(6)) states that the construction or maintenance of forest roads for silviculture activities is exempt from regulation under Section 404 of the Clean Water Act, *provided the roads are constructed and maintained in accordance with Best Management Practices* (BMPs) listed at 33 CFR 323.4(a)(6)(i) through (xv) to assure that flow and circulation patterns and chemical and biological characteristics of waters of the U.S. are not impaired, that the reach of the waters of the U.S. is not reduced, and that any adverse effect on the aquatic environment is otherwise minimized. A copy of the mandatory BMPs is enclosed with this letter, and your particular attention is directed to BMPs (i) through (x).

In order to qualify for the exemption, forest roads must be used for the *sole purpose* of silvicultural activities. Roads meeting one or more of the following criteria and meeting the BMPs will generally be

considered exempt: (a) roads that are not connected to a community road system or a ferry system (e.g., King George Timber Sale); (b) roads built in isolated locations, with no or low population (e.g., Upper Carroll and King George Timber Sales); (c) roads that otherwise have low anticipated non-silvicultural use substantiated by qualitative descriptions and/or data from similar projects and areas (e.g., traffic less than that associated with the silvicultural operation provided the maintenance level of the road is not increased); (d) roads prescribed to be closed by a road order under 36 CFR 261, or by blocking to prevent travel by cars and trucks (e.g., South Lindenberg Timber Sale); and (e) roads that are not connected to an arterial road system. Roads not meeting any of these criteria will usually require DA authorization. Based on the available information, we are unable to agree with your statement that the Control Lake Project roads are exempt from Section 404 permitting requirements.

- Wetland Mapping: For Corps-regulated activities, the standard for delineation of wetlands is the Corps of Engineers, Wetland Delineation Manual (1987), including any supplemental guidance or subsequent revisions. The Corps' policy is to verify all preliminary jurisdictional determinations or jurisdictional determinations done by anyone other than the Corps, to assure the work is consistent with the 1987 Wetland Delineation Manual. Valid sources of information, such as the NWI maps, the Tongass National Forest Resource Inventory, plant association data, or the Classification and Delineation of Wetlands Using Soils and Vegetation Data, Tongass National Forest (DeMeo, et. al. 1989), are suitable for supporting one or more wetlands criteria (soils, vegetation, hydrology) at the start of the National Environmental Policy Act process. The level of information provided to the Corps for the King George Timber Sale (December 1996) was a good example that met Corps expectations for wetland mapping for exempt activities.

The SDEIS states on page 4-27 that "mitigation measures designed to protect wetland areas involved, to the extent possible, the avoidance of muskegs during office planning and field reconnaissance". It also states on page 3-21 that the DeMeo and Loggy (1989) procedure which calculates wetland acreage based on the general percentage of the vegetation and soil types within mapping units was used to identify wetlands in the project area. Consequently, this procedure generates an acreage of potential wetlands rather than a wetland delineation and associated acreage. Since the SDEIS wetland information is based on the DeMeo and Loggy procedure, which does not identify the geographic location of wetlands within the project area, we are unable to agree that your project avoids and minimizes road impacts to wetlands to the

maximum extent practicable, which is required under the above-mentioned BMPs. In addition, the BMPs require avoidance of all wetlands to the maximum extent practical, which is not limited to "muskegs".

In this regard, as was stated in our January 17, 1996, letter, we would appreciate a copy of the wetland delineation mapping prepared for this project, overlain by the proposed roads, in order to facilitate our review and determination of compliance with the Clean Water Act exemption requirements and/or Corps permitting requirements. Alternatively, supplemental supporting information, such as field verification data sheets with sampling points, ground and aerial photography, wetland identification using the DeMeo/Loggy wetland classification method, soil mapping, and/or any other valid sources should be provided. If you are unable to provide this information, we will prepare a final wetland delineation for your project, within the constraints of our resource allocations. It should be understood that an onsite inspection by this office may be required prior to our making the final wetland delineation.

ACOE - 4

- Road Closure: The SDEIS states on page 4-42 that Angel Lake has a proposed roaded area and trail system planned which will increase access to the lake. It also states on page 4-189 that all roads except those that would be kept open for recreational purposes, would be closed at completion of harvest activities, and that some roads in the southern most part of the Honker Divide would remain open to selected points to allow access to the waterway. Roads which are constructed or upgraded in waters of the U.S., including wetlands, which would appreciably improve or encourage motorized access to areas used for subsistence harvesting of resources or recreation would not be for the sole purpose of silvicultural activities and would require DA authorization. Alternatively, effective physical barriers to motorized public access, such as gates, tank traps, removal of drainage structures, etc. are some indications of sole use, although monitoring and maintenance is required to ensure that closure methods are effective. (Reference the Clean Water Act 404(f) Exemptions section above for additional clarification on this issue.)

ACOE - 5

We have determined *based on the available information*, that portions of the referenced roads that would be constructed in waters of the U.S., including wetlands, and which would provide for public recreation would not be for the sole purpose of timber harvest and would require DA authorization. In this regard, you will need to include a description of fill quantities and types, detailed plan and section drawings and a location map depicting the above roads, in your

DA permit application. Alternatively, you may provide supplemental information regarding the level of non-silvicultural use, including qualitative descriptions and/or data from similar projects and areas (e.g., traffic less than that associated with the silvicultural operation provided the maintenance level of the road is not increased) for our review and consideration prior to our final determination of DA permit requirements.

ACOE-5

- Log Transfer Facilities (LTF): Page 3-121 of the SDEIS states that there are no LTFs in the Control Lake Project Area, and that LTFs adjacent to the project area are located at Winter Harbor, Naukati, Coffman Cove, and Thorne Bay which operate under existing permits. Provided that no modifications of the existing LTFs would be required in waters of the U.S. to accommodate the proposed timber sale, no additional DA authorization would be required for this aspect of the project.
- DA permit evaluation: Impacts to waters of the U.S. should be a major consideration during your review of alternatives with regard to both meeting the Federal BMPs, and for those project components which would require individual Section 10 of the Rivers and Harbors Act of 1899 or Section 404 of the Clean Water Act authorization. For wetland development proposals requiring Corps authorization, Corps permits are available only for projects which clearly demonstrate compliance with the Clean Water Act Section 404(b)(1) guidelines, which state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences. In those cases where a non water-dependent activity associated with a discharge is proposed for a "special aquatic site, such as wetlands, practicable alternatives are presumed to exist unless clearly demonstrated otherwise. An alternative is considered practicable if it is available and capable of being accomplished after taking into consideration costs, existing technology and logistics in light of overall project purpose.

ACOE-6

ACOE-7

Enclosed is a copy of our Regulatory Program Applicant Information pamphlet, which includes a permit application. This pamphlet is designed to assist you in applying for a DA permit and provides general information and guidance on how to complete the permit application.

We appreciate the opportunity to review this SDEIS, and look forward to continued coordination for this and future timber sales. We are available for further discussion or clarification of our comments, as

necessary. Please contact me at the letterhead address, by telephone at (907) 790-4490, or by FAX at (907) 790-4499 if you have any questions concerning our requirements.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. Thompson".

Ralph W. Thompson
Field Office Manager

Enclosures

Section 404 of the Clean Water Act Exemptions
Best Management Practices for Forest Road Construction
33 CFR 323.4(a)(6)

33 CFR 323.4(a)(6), identifies Best Management Practices (BMPs) which must be met in order to claim an exemption from Section 404 permitting requirements for forest roads which are constructed for the sole purpose of silvicultural activities.

Permanent roads, temporary access roads, and skid trails in waters of the US shall be held to the minimum feasible number, width, and total length consistent with the purpose of specific farming, silvicultural, or mining operations, and local topographic and climatic conditions;

ii. All roads, temporary or permanent, shall be located sufficiently far from streams or other water bodies (except for portions of such road which must cross water bodies) to minimize discharges of dredged or fill material into waters of the U.S.;

iii. Road fill shall be bridged, culverted, or otherwise designed to prevent the restriction of expected flood flows;

iv. Road fill shall be properly stabilized and maintained during and following construction to prevent erosion;

v. Road fill shall be made in a manner that minimizes encroachment of heavy equipment within waters of the U.S., (including adjacent wetlands) that lie outside the lateral boundaries of the fill itself;

vi. Vegetative disturbance in waters of the U.S. shall be kept to a minimum;

vii. Road crossings shall not disrupt the migration or other movement of those species of aquatic life inhabiting the water body;

viii. Borrow material shall be taken from upland sources whenever feasible;

ix. The discharge shall not take, or jeopardize the continued existence of a threatened or endangered species as defined under the Endangered Species Act, or adversely modify or destroy the critical habitat of such species;

x. Discharges into breeding and nesting areas for migratory waterfowl, spawning areas, and wetlands shall be avoided if practical alternatives exist;

xi. The road fill shall not be located in the proximity of a public water supply intake;

xii. The discharge shall not occur in areas of concentrated shellfish production;

Best Management Practices Continued:

xiii. The discharge shall not occur in a component of the National Wild and Scenic River System;

xiv. The road fill shall consist of suitable material free from toxic materials in toxic amounts;

xv. All temporary fills shall be removed in their entirety and the area restored to its original elevation.

Responses to U.S. Army Corps of Engineers

- ACOE-1** Comment noted.
- ACOE-2** Note that proposed activities associated with wetlands have changed in the Final EIS and for the Selected Alternative. Also, western hemlock-western redcedar plant associations have many areas that are not on hydric soils which usually will not be classified as wetlands.
- ACOE-3** All roads proposed for construction with the Control Lake timber sales will fall under the silvicultural exemption. Most roads are planned to be closed after harvest operations are completed. A few roads are planned to be left open for ongoing silvicultural activities. Incidental other uses, such as recreation, is likely to occur on these roads. Significant efforts to avoid or minimize effects to wetlands have been incorporated into project designs. All federal and Forest Service BMPs will be used as applicable. The text of the Final EIS has been updated to clarify the above.
- ACOE-4** Because all planned project activities are under the silvicultural exemption as noted above and in the Final EIS, the wetland mapping as discussed is not required. Note that wetland mapping in relation to roads and units is included on the road cards.
- ACOE-5** The road to harvest units 597.2-434 and 435 is planned to be left open for ongoing silvicultural activities. Incidental recreation use will likely occur after the project, but is expected to be much less than traffic levels that will occur during implementation of the project itself. See Appendix E for individual road access objectives. Note that no new roads are in the Encourage category.
- ACOE-6** Comment noted.
- ACOE-7** Road cards, field notes and the appropriate sections in the Final EIS address wetlands. During implementation of activities included in the Selected Alternative, field and survey notes for specific roads can be made available to the ACOE upon request.



UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

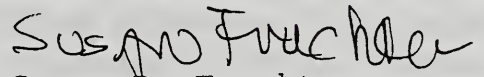
January 29, 1998

Forest Supervisor
Tongass National Forest, Ketchikan Area
Attn: CONTROL LAKE SDEIS
Federal Building
Ketchikan, AK 99901

To Whom It May Concern:

Enclosed are comments on the Draft Environmental Impact Statement for Control Lake Timber Sales, Alaska Region, Alaska. We hope our comments will assist you. Thank you for giving us an opportunity to review this document.

Sincerely,


Susan B. Fruchter
Acting NEPA Coordinator

Enclosure



MEMORANDUM FOR: Susan B. Fruchter
Acting NEPA Coordinator

FROM: Charles W. Challstrom
Acting Director, National Geodetic Survey

SUBJECT: DEIS-9801-07-Control Lake Timber Sale, Alaska Region, Alaska

The subject statement has been reviewed within the areas of the National Geodetic Survey's (NGS) responsibility and expertise and in terms of the impact of the proposed actions on NGS activities and projects.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the NGS home page at the following Internet World Wide Web address: <http://www.ngs.noaa.gov>. After entering the NGS home page, please access the topic "Products and Services" and then access the menu item "Data Sheet." This menu item will allow you to directly access geodetic control monument information from the NGS data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

USDC - I

If there are any planned activities which will disturb or destroy these monuments, NGS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project includes the cost of any relocation(s) required.

For further information about these monuments, please contact Rick Yorczyk; SSMC3, NOAA, N/NGS; 1315 East West Highway; Silver Spring, Maryland 20910; telephone: 301-713-3230 x142; fax: 301-713-4175.

Responses to U.S. Department of Commerce

USDC-1 Your comments on access to information and protection of monuments are noted.



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1689 C. Street, Room 119
ANCHORAGE, ALASKA 99501-5126

ER 98-0031

March 13, 1998

Mr. Bradley Powell
Forest Supervisor
Ketchikan Area
Tongass National Forest
Federal Building
Ketchikan, Alaska 99901

Dear Mr. Powell:

In response to your December 19, 1997, request, we have reviewed the Control Lake Timber Sales Supplemental Draft Environmental Impact Statement (EIS). We offer the following comments for your consideration.

GENERAL COMMENTS

The Supplemental Draft EIS was produced to replace the October 1995 Draft EIS and to reflect: (1) the closure of the Ketchikan Pulp Company's pulp mill; (2) cancellation or modification of the long-term contract which the Control Lake Timber Sale on Prince of Wales Island was originally intended to supply; and (3) forest management changes directed by the 1997 Tongass Land Management Plan (TLMP) Revision. We recognize the considerable effort required to adequately address these changes, and commend the Forest Service for making this commitment.

Range of Alternatives: The Supplemental Draft EIS makes a significant and welcome change from many other timber sale EIS documents produced recently in the Ketchikan Area (including the 1995 Draft EIS for this project) in that the Purpose and Need statement does not specify a timber harvest volume for this project. This is reflected in the relatively wide range of timber volumes that would be harvested under the three action alternatives, ranging from 38 to 113 million board feet.

USFW-1

Instead of restricting the analysis to alternatives that produce a specified volume, the Purpose and Need is defined in terms of the project area's potential contributions toward more general Area-wide and Forest-wide timber and employment goals and objectives from the TLMP. This allows consideration of a broader range of alternatives, and may help the Forest Service design and select an alternative to meet project objectives without significantly harming other forest resources. We are concerned, however, that the Purpose and Need statement does not specifically include protection or enhancement of resources beyond timber production and employment. The statement recognizes that a range of wildlife habitat conditions would be provided, but makes no

commitment to avoid or minimize degradation of important habitats. We believe that protection of watersheds, wildlife, fisheries, recreation, subsistence uses, and other forest resources should be incorporated into the Purpose and Need statement in the Final EIS.

USFW-1

Roads: Many impacts on fish and wildlife resulting from timber harvest are directly related to construction, maintenance, and use of roads. Mortality of many game and furbearing species increases as road densities increase. For example, Person et al. (1996) demonstrated that wolf harvests on Prince of Wales Island doubled where road densities averaged 0.66 miles per square mile, tripled at 1.19 miles per square mile, and quadrupled at 1.63 miles per square mile, as compared to unroaded conditions. Construction of roads also results in the permanent loss of habitat. Roads can also contribute sediment to streams, which can impact fish spawning success and invertebrate production. These impacts to fish and wildlife can be minimized by avoiding new road construction to the extent possible. Alternative 10 appears most favorable for minimizing new road construction. We suggest that the Final EIS include an alternative that avoids new road construction.

USFW-2

We support the Thorne Bay District's efforts to address access management in the project area by identifying those roads that would be closed and those that would remain open following harvest. This effort complements the District's comprehensive access management planning, which we also support. Road density currently ranges from 0.19 to 0.91 miles per square mile in those portions of the four Wildlife Analysis Areas (WAA) in the project area, and would range from 0.07 to 0.85 miles per square mile following post-harvest closures. It is recommended that road densities not exceed 0.7 miles per square mile in each WAA. We suggest that an analysis of how this project will contribute to the overall road density in each entire WAA be included in the Final EIS.

USFW-3

We suggest that the Final EIS describe how each road proposed for closure would be "closed" (perhaps on the Road Design Cards). We recommend, for example, that culverts be removed from roads that will not be maintained, to prevent the culverts from becoming plugged with debris which can cause mass failure of the roadbed. Also, sowing roadbeds with alder seed can accelerate alder growth. Cutting and spreading alder branches with mature, female cones on the roadbed is a simple, inexpensive, and effective method. Ultimately, regrading roadbeds to establish original contours may be the most effective at avoiding future impacts. We suggest that the Final EIS discuss these issues and the need for keeping open any roads constructed for this project.

USFW-4

Helicopter Yarding: Some harvest units in the proposed action would use helicopter yarding, which generally requires less road building than cable yarding. There appear to be additional opportunities to eliminate several miles of proposed new roads by flying logs to existing roads or to newly constructed roads designed to reach only within feasible helicopter distance of the target units. In Value Comparison Unit (VCU) 597.1, for example, relatively long segments of new road, which could be reduced or eliminated, are proposed for units 414, 449, 458, 459, and 460. Similar opportunities are apparent in virtually all VCUs in which harvest is proposed. We request

USFW-5

that the Forest Service re-evaluate all such units in the Final EIS to identify where logs could be yarded by helicopter.

USFW-5

The issue of helicopter yarding to avoid impacts to fish and wildlife habitats was raised in our January 25, 1996, letter on the Draft EIS. The Forest Service's response in Appendix B of the Supplemental Draft EIS indicated that costs of helicopter logging are approximately double those of conventional cable logging, and that it is not economically feasible in units of low timber volume. We note that using helicopter logging can eliminate or reduce major expenditures for road construction, and suggest that this be included in a cost comparison of one yarding system against the other in the Final EIS.

USFW-6

Landscape Connectivity: We are concerned that landscape connectivity in the Rio Roberts drainage will be compromised by the proposed action. This essentially unharvested watershed provides important wildlife and aquatic habitat values. We believe that in the Final EIS the boundary of the small Old Growth Reserve near Control Lake be moved to the VCU line to the south to protect the wildlife corridor of the Rio Roberts drainage. At a December 2-4, 1996, interagency meeting the Forest Service committed to inclusion of the Rio Roberts area in the old growth habitat reserve system. We understood this to include the entire watershed. Specifics of this issue are discussed further in our specific comments on Landscape zones, below, and will be addressed in detail in a forthcoming letter from the Fish and Wildlife Service (FWS).

USFW-7

In order to provide connectivity between the Honker Block Old Growth Reserve and the Twin Mountain Old Growth Reserve to the west (outside the project area), we suggest that, to provide a corridor of at least 1,000 feet wide between Election and Steelhead Creeks, the Final EIS modify or delete harvest unit 595-412 and modify the boundary of the Election Creek Small Old Growth Reserve. Work by Concannon (1995) on the Tongass National Forest demonstrates that edge effects are detectable up to 660 feet from clearcut edges. Thus, corridors less than twice this width (1320 feet) are likely to exhibit edge characteristics throughout. Because more information is needed regarding an appropriate width for corridors, however, we would agree with a width of 1,000 feet at this time, comparable to the TLMP beach buffers that are also meant to serve for old growth habitat connectivity. We believe that the existing Election Creek Old Growth Reserve could be narrowed to eliminate lands above approximately 1,000 feet elevation on the east, and 1,200 feet elevation on the west. We suggest the Final EIS address these modifications.

We also support the Alaska Department of Fish and Game's proposal to protect the outstanding wildlife and recreation values of the Honker Block Old Growth Reserve by deleting all units in VCU 575, and suggest that the Final EIS reflect their recommendation.

Decayed Trees: We understand that with closure of the pulp mill in Ketchikan, there is little market for logs with a high degree of decay, damage, or other "defect." The features that make these trees economically undesirable, however, provide important habitat components for many species of wildlife, ranging from flying squirrels, martens, and black bears to woodpeckers,

USFW-8

murrelets, and owls. We suggest evaluating, in the Final EIS, the effects of leaving such trees standing wherever possible.

USFW-8

TLMP Standards and Guidelines: The Supplemental Draft EIS states that this project has been redesigned to meet the 1997 TLMP Standards and Guidelines. In a September 22, 1997, letter, the FWS asked that the Supplemental Draft EIS reflect results of an August 1997 meeting with the Forest Service concerning incorporation of the new Standards and Guidelines for four wildlife-related issues (old-growth connectivity, endemic terrestrial mammals, goshawk, and marten) into the project. The FWS also provided updated information regarding the potential listing of the Queen Charlotte goshawk and Alexander Archipelago wolf and requested that the new TLMP Standards and Guidelines for these two species be discussed and implemented. We believe the Final EIS should address the concerns stated in the FWS's September 22, 1997, letter.

USFW-9

Despite the significant reduction in harvest proposed for the project area, we believe that the Supplemental Draft EIS falls short in its attempt to comply with TLMP. For example: several required analyses are neither presented nor discussed; older Standards are used in some cases; relevant new information and developments are not reflected in the text; and required protections have not been incorporated into individual unit prescriptions. We urge the Forest Service to complete and disclose results from the required analyses in the Final EIS using the current TLMP. These and other concerns are discussed more fully below.

SPECIFIC COMMENTS

TLMP Transition (p.2-2 to 2-3): The text indicates that all management direction in the TLMP must be followed when implementing the proposed action, except for the standards and guidelines concerning landscape connectivity, endemic terrestrial mammals, northern goshawk, and American marten, which would be incorporated as negotiated among several agencies, including the FWS. We believe that the analyses presented for the Alexander Archipelago wolf and regarding connectivity, goshawks, and marten need to be revised in the Final EIS to reflect the TLMP Standards and Guidelines and the agreements reached between the FWS and the Forest Service.

USFW-10

Landscape Zones, Table 2-1 (p. 2-6): The Supplemental Draft EIS refers to the importance of the "Rio Roberts Watershed" for landscape connectivity, wildlife habitat, and as an essentially unharvested "control" watershed. Additional references to the value of the drainage for wolves, deer, and goshawks are made, including on individual harvest unit cards (Draft EIS, Appendix F). Descriptions of all three action alternatives state that harvest is avoided in the watershed (pp. 2-16, 2-19, and 2-21). The FWS met with the Forest Service prior to completion of the TLMP, and more recently to discuss the importance of this watershed for wildlife. The Supplemental Draft EIS, however, shows four proposed harvest units in Rio Roberts watershed. We are concerned that these four units and any future units in the Rio Roberts watershed will affect the valuable wildlife habitat and travel corridors that currently exist. To maintain the integrity of this watershed, we recommend that the Forest Service delete from the Final EIS harvest units 596-

USFW-11

410, -416, -417, and -418, and modify the small old growth reserve at Control Lake to protect the valuable habitat in the Rio Roberts watershed.

USFW-11

Issue 4-Wildlife Habitat and Biodiversity (Environmental Consequences, All Alternatives, p. 2-16 to 2-26): We suggest that the text for Alternative 1 (no action) summarize the losses to wildlife habitat and landscape connectivity that have already occurred, and the losses that can be reasonably expected as canopies close in existing harvested areas. Output from the most recent deer model (1997), and impacts on wolves and other species, we believe, should be described in the Final EIS and similar descriptions be included for each of the action alternatives (p. 2-18 to 2-26).

USFW-12

We suggest that the discussion of "Issue 4," on page 2-25, describe the effects of clearcut regeneration on forage production and ramifications for wildlife populations over the long term.

Site-Specific Mitigation Measures Incorporated into Unit and Road Design (Table 2-5, p. 2-38): It should be clarified in the Final EIS why nest buffers for marbled murrelets (Mitigation Measure W7) would apply to zero units under all three alternatives, while nest buffers for goshawks (Mitigation Measure W9) would apply to an indefinite number of harvest units. The TLMP Standards and Guidelines direct protection for identified marbled murrelet nests. We recommend that, in the Final EIS, the mitigation description for marbled murrelet nests be as follows: "Implement the marbled murrelet standards and guidelines, as appropriate, if nesting is identified."

USFW-13

Key Terms (Water, Fish, and Fisheries, p. 3-29): We suggest inclusion of the Aquatic Habitat Management Unit stream classes here. The definition of AHMU on this list should be the same as the one in the Glossary.

USFW-14

Estimated MIS Habitat Capabilities for 1995 Expressed as a Percentage of 1954 Habitat Capabilities (Table 3-24, p. 3-83): We suggest that the results from the most recent deer habitat model (1997) be displayed in this table. The 1991 deer habitat capability model was found to lack significant information required to reflect high value winter deer habitat.

USFW-15

Sitka Black-tailed Deer (p. 3-84 to 3-85): The TLMP requires use of the most current model of deer habitat capability when evaluating project effects on wolf populations. We believe, and the text here suggests, that the current model would indicate a much more serious situation for deer in the project area as a result of past harvesting than is shown using the 1991 model. We recommend that the analysis be done with the 1997 deer habitat capability model, as required by the TLMP.

Also lacking from this section is a discussion, which we believe should be included in the Final EIS, of why second-growth stands are inferior deer habitat; i.e., the effects of canopy closure on forage resources, and the inability of young stands to intercept snow. We also suggest including trends in habitat capability over the next 100 years, by decade for each WAA and each alternative.

USFW-16

Wolf (p. 3-86): High road densities have effects on wolves beyond increasing access for

USFW-17

hunters. Greater access is also frequently capitalized upon by trappers, who are typically much more efficient at harvesting wolves than are hunters. We suggest that the Final EIS broaden its discussion of wolves to include these issues.

USFW-17

The TLMP Standards and Guidelines for Alexander Archipelago Wolf (Wildlife XI.3) specify that deer habitat capability should be provided to first maintain sustainable wolf populations, and then to meet human deer harvest demands. "This is generally considered 13 deer/square mile in biogeographic provinces where deer are the primary prey of wolves" (Person et al. 1997), not 5 deer per square mile as stated in the Supplemental Draft EIS. Person et al. (1997) pointed out that to provide 13 deer per square mile on a sustainable basis, habitat capability must be at least 18 deer per square mile, to account for annual mortality, and depression of natality as density approaches habitat capacity. We recommend that the Final EIS use these numbers, not 5 deer per square mile.

USFW-18

Further, the TLMP directs the Forest Service to "Use the most recent version of the interagency deer habitat capability model and field validation of local deer populations to estimate deer habitat capability." Significant changes have been made to the 1991 model used in the Supplemental Draft EIS, which could change the conclusion of the analysis. We suggest that 1997 deer habitat capability model be used in the Final EIS.

USFW-19

Marten (p.3-87 to 3-88): We believe the Final EIS should include discussion of the TLMP's American Marten Standards and Guidelines (Wildlife XVI.), as applied in VCU 297.2, which was discussed in meetings with the FWS. Also, the unit cards should, we believe, reflect retention of canopy cover, trees, and logs as specified in the TLMP.

USFW-20

Threatened, Endangered, and Sensitive Species (p. 3-93 to 3-102): As we informed you in our January 25, 1995, letter on the Draft EIS, the FWS no longer uses the terms "Category 2 Candidate" or "Category 3 Candidate," as described in the "Key Words" section, and used throughout this section of text. References to "Candidates" in the Glossary (p. 6.5) should be deleted in the Final EIS.

USFW-21

We recommend that the sections on the Queen Charlotte goshawk (p. 3-100 to 3-101) and Alexander Archipelago wolf (p.3-86 to 3-87) in the Final EIS discuss the recent actions regarding potential listing of these species under the Endangered Species Act of 1973. Specifically, the FWS was petitioned to list the wolf in 1993 and the goshawk in 1994. In 1995, the FWS found that listing was not warranted for either species. Both conclusions were challenged in court, and the findings were remanded to the Secretary of the Interior for reconsideration. In August 1997, following release and review of the TLMP, the FWS again found that listing these species was not warranted, based largely on full implementation of the TLMP.

USFW-22

We suggest that the TLMP guidelines relative to goshawks be summarized, and their applicability to the project area described in the Final EIS.

USFW-23

To ensure that logging does not inadvertently destroy goshawk nests or young, we recommend that goshawk nesting surveys be done annually in all units included in the proposed or selected alternative, until those units are harvested. Where nesting is confirmed, the units should be dropped, deferred, or modified to meet the appropriate guidelines of the TLMP. We suggest that the Final EIS include a discussion of these recommendations.

USFW-24

Management Indicator Species (p. 4-77): The Supplemental Draft EIS cites project-area results for the 1991 deer habitat capability model only. We are concerned that the 1991 model has significant flaws. This is why the TLMP specifically required use of the most recent interagency deer habitat capability model. We recommend that the 1997 deer habitat capability model be used for the analysis in the Final EIS. Once the proper analysis of deer habitat capability is completed, Table 4-36 can be updated.

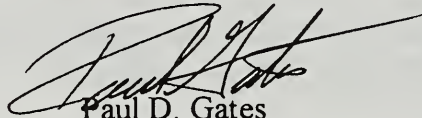
USFW-25

Gray Wolf (p. 4-81): We believe that, with the use of the most recent deer habitat capability model, this discussion will be more accurate and will be more in compliance with the TLMP.

USFW-26

We appreciate the opportunity to comment on the Supplemental Draft EIS for the Control Lake Timber Sales. If you have any questions on the matters discussed above, please contact Steve Brockmann of the FWS in Ketchikan at (907) 225-9691.

Sincerely,



Paul D. Gates

Regional Environmental Officer - Alaska

LITERATURE CITED

- Concannon, J. A. 1995. Characterizing Structure, Microclimate and Decomposition of Peatland, Beachfront, and Newly-Logged Forest Edges in Southeastern Alaska. Ph.D. Dissertation, University of Washington, College of Forest Resources.
- Person, D., M. Kirchhoff, V.V., Ballengergh, G.C. Iverson, and E. Grossman. 1996. The Alexander Archipelago Wolf: A conservation Assessment. General Technical Report PNW-GTR-384. 42 pp.
- Person, D., M. Kirchhoff, V.V., Ballengergh, and R.T. Bowyer. 1997. Personal Communication to Beth Pendleton, U.S.D.A. Forest Service, Juneau. September 19, 1997.

Responses to U.S. Fish and Wildlife Service

- USFW-1** The Forest Plan desired future condition that is referenced in the Purpose and Need section incorporates resource and use future conditions and objectives. Also note that the Forest Plan LUDs and Standards and Guidelines used to design the proposed activities incorporate resource and use objectives and protection measures.
- USFW-2** The No Action alternative includes no road construction and provides a basis to compare other alternatives. Development and refinement of the alternatives in the Final EIS has included changing from conventional harvest systems to helicopter systems which has significantly reduced the number of miles of proposed roads. This in combination with the No Action alternative and the fact that various alternatives do not enter specific areas of the Project Area deemed it not necessary to include an alternative that included no new roads.
- USFW-3** Road density changes by alternative have been included in the Final EIS.
- USFW-4** The Access Management section in Chapter 4 of the Final EIS has been updated to better address road closures and methods of closures. Additionally, the updated road cards include similar information.
- USFW-5** As noted in the response to USFW-2 many roaded proposals have been changed to helicopter. Examples include in the Kogish Mountain area, Shinaku area, 591-405, 597.2-414, et al.
- USFW-6** In addition to the responses to USFW-2 and 5 above, the economic efficiency information shown in Chapter 4 of the Final EIS includes noticeable changes in alternative logging and roading costs. Helicopter logging is the major factor in these changes. As noted there, sales that include helicopter logging may not be able to be sold except in higher market conditions.
- USFW-7** The Selected Alternative includes no harvest units in the Rio Roberts watershed. This will maintain the option of changing the OGHR boundaries in a future Forest Plan review of the overall conservation biology strategy.
- Harvest unit 595-412 has been adjusted to assure it is at least 1,000 feet north of the property boundary as suggested. No change has been made to the Election Creek OGHR.
- The Selected Alternative includes no harvest units in VCU 575.
- USFW-8** Harvest unit prescriptions encourage leaving unmerchantable and less-merchantable trees that are safe to work near in all harvest units.
- USFW-9** The Final EIS has been updated to better reflect new information and the Forest Plan.
- USFW-10** The Final EIS has been updated to better reflect the Forest Plan Standards and Guidelines and the agreements reached between the USFWS and the Forest Service.
- USFW-11** Units 596-410, 416, 417 and 418 were not deleted from the Final EIS. However, these units are not included in the Selected Alternative.
- USFW-12** The Final EIS has been updated to better reflect new information and the Forest Plan.
- USFW-13** The mitigation measures have been clarified for the Final EIS.

Responses to U.S. Fish and Wildlife Service

- USFW-14** The stream classes are defined later in that Chapter.
- USFW-15** The most recent version of the deer model has been run and results incorporated into the Final EIS.
- USFW-16** Effects of second growth development have been incorporated throughout the analysis.
- USFW-17** The analysis for the long term has been done by incorporating the cumulative projections in the Forest Plan Final EIS. Access management discussions have been broadened in the Final EIS to include the additional wolf mortality and road density issues mentioned.
- USFW-18** Based on model predictions the Project Area will provide an estimated 15 deer per square mile. This represents about 1 percent change from the existing condition.
- USFW-19** See response to USFW-15.
- USFW-20** Marten discussions have been broadened in the Final EIS as suggested.
- USFW-21** This has been updated as suggested.
- USFW-22** The goshawk and wolf discussions have been updated as suggested.
- USFW-23** The goshawk mitigation measures have been updated to better reflect the Forest Plan.
- USFW-24** See response to USFW-23.
- USFW-25** Management indicator species discussions have been updated in the Final EIS to reflect changes in the Forest Plan.
- USFW-26** Comment noted.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

April 14, 1998

Reply To
Attn Of: ECO-088

Ref: 96-097-AFS

David Arrasmith
Ketchikan Administrative Area
Tongass National Forest
Federal Building
Ketchikan, Alaska 99901

Dear Mr. Arrasmith:

In accordance with our responsibilities under the National Environmental Policy Act and §309 of the Clean Air Act, we have reviewed the supplemental draft Environmental Impact Statement (EIS) for the proposed **Control Lake Timber Sales**. The supplemental draft EIS analyzes three action alternatives to harvest between 38 and 123 million board feet of timber from a 200,000 acre project area on Prince of Wales Island, northwest of Ketchikan, Alaska. The draft EIS identifies Alternative 11 as the preferred alternative.

Based on our review, we have rated the supplemental draft EIS EC-2 (Environmental Concerns - Insufficient Information). This rating and a summary of our comments will be published in the *Federal Register*. We have enclosed a summary of the rating system used in our review for your reference.

Our primary concerns, which are related to the potential impacts of the project on water quality and the marine environment, are highlighted below.

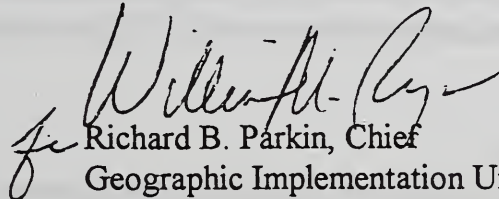
- 1) The draft EIS does not address the direct environmental impacts associated with the proposed use of four existing log transfer facilities (LTFs) for each of the project alternatives. The final EIS should include a discussion of the existing conditions at the LTFs proposed for use in the project alternatives, as well as an evaluation of environmental consequences associated with the use of those LTFs. EPA - 1
- 2) The EIS lacks information about the condition of the current roadway system within the project area nor does it evaluate the cumulative effects of the roadway network on water quality and fish habitat. While the EIS does indicate that over 50 miles of existing roads and a similar amount of new roads would be "closed" upon completion of harvest activities, we were unable to locate any information in the document that explains why the roads proposed for closure have been selected and how water quality and fish habitat would benefit from these closures. Additionally, road closure and maintenance methodologies were not included in the EIS. We recommend that the EIS be revised to EPA - 2

include this information.

Enclosed please find our detailed comments. We are interested in working closely with the Forest Service in the resolution of these issues and I encourage you to contact Bill Ryan at (206) 553-8561 at your earliest convenience to discuss our comments and how they might best be addressed.

Thank you for the opportunity to review this supplemental draft EIS.

Sincerely,


for Richard B. Parkin, Chief
Geographic Implementation Unit

Enclosures

cc: Kevin Hanley, ADEC
Ralph Thompson, ACOE-Juneau

**Environmental Protection Agency
Comments on the
Control Lake Timber Sales
Supplemental Draft Environmental Impact Statement (EIS)**

Introduction

The Environmental Protection Agency (EPA) has completed its review of the supplemental draft EIS for the Control Lake Timber Sales project. The comments that follow are based on information contained in the January 1998 supplemental draft EIS, the October 1995 draft EIS, and information discussed in a February 10, 1998 inter-agency meeting related to the project.

Protection of Riparian Areas

It is our understanding, based on discussions at the February 10, 1998 meeting, that the Forest Service will be providing protection of riparian areas through the full implementation of the Process Group Standards and Guidelines (S&Gs) contained in the 1997 Tongass Land and Resource Management Plan (TLMP). We support this approach, as it will result in adequate protection of fish habitat/water quality. We do not believe that information presented in Appendix E of the supplemental draft EIS (Control Lake Project Summary of Watershed Analyses) is of sufficient detail and site-specificity to justify deviation from the Process Group S&Gs.

EPA - 3

Log Transfer Facilities

Our February 5, 1996 comment letter on the draft EIS for this project provided numerous comments related to the lack of information and analysis of four existing log transfer facilities (LTFs) at Winter Harbor, Coffman Cove, Naukati Bay, and Thorne Bay that are proposed to be used for this sale. We recommend that the Forest Service refer to our comments on the draft EIS, as we believe they are all still applicable.

EPA - 4

We remain very concerned with the lack of information and analysis related to the proposed use of the existing LTFs in the supplemental draft. The supplemental draft EIS does not provide information related to the current conditions at the locations proposed to be used (such as current dive reports), nor does it address the potential impacts to the marine environment related to in-water log transfer and storage at each of the sites. Impacts from log transfer and storage activities would be a direct consequence of the proposed project and must be analyzed and discussed in the EIS to ensure that environmental information is available to public officials and citizens before decisions are made and actions are taken (see 40 CFR 1500.1(b)). Additionally, we believe that additional information and analyses of the proposed LTF is needed to ensure that all practicable means are used to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects on the environment (see 40 CFR 1500.2(f)). This is particularly critical for the proposed use of the Thorne Bay LTF, as Thorne Bay has been identified by the State of Alaska as not meeting Water Quality Standards because of log transfer

and/or storage activities. While the supplemental draft EIS states each of the LTFs is permitted, and assumes that these permits would be complied with, we do not believe that the EIS adequately evaluates and discusses the potential impacts from the proposed use of the LTFs to satisfy 40 CFR 1502.16.

EPA - 4

The EPA supports alternatives to log transfer which would minimize the direct, indirect, and cumulative impacts to the marine environment. The supplemental draft EIS indicates that "during the transfer of logs from land to water, bark would be sloughed off and could be deposited on the ocean bottom; bark also is continually sloughed off by agitation by wind and waves while logs are in rafts." Therefore, other alternatives which do not require the transfer of logs from land to water should be seriously considered. The direct land to barge transfer of logs would minimize the discharge and accumulation of woody debris. Activities which do not require the discharge of bark and other woody debris into the marine environment represent the least damaging alternative.

Roads

While we are encouraged that the supplemental draft EIS identifies 56 miles of existing roads to be "closed" with the implementation of the alternatives under consideration (as well as 22 and 62 miles of new roads, depending on alternative), we are concerned with 1) the general lack of information presented in the EIS regarding the condition of the existing roadway system, 2) the lack of updated road cards for the project area, and 3) a clear definition of the closure methods to be used for new and existing roads.

EPA - 5

Forest roads are significant contributors to the degradation of the aquatic ecosystem as sources of sediment. Consequently, the management (including potential rehabilitation) of the forest roadway system is a critical element in achieving the goals and objectives presented in Chapter 2 of the 1997 TLMP related to fish and water quality protection on the Tongass. The need to adequately address the issue of roads is evidenced by the presently proposed moratorium on road building in roadless areas throughout the National Forest system and the advance notice of proposed rulemaking issued by the Forest Service related to the development of a comprehensive roads policy. We contend that an understanding of how existing roads (including stream crossings) currently impact the aquatic system is an integral part to designing projects that ensure adequate protection of water quality and fish habitat. We were unable to locate any information in the supplemental draft EIS that allows us, as well as the public and the decision maker, to understand the condition of the current roadway system. We recommend that the EIS be revised to include an inventory (including locations) of roadway-related sediment sources and fish passage barriers, such as "blown-out" or blocked culverts, or slope failures associated with roads. This information will provide reviewers a better understanding of 1) the potential improvements needed for the existing system to ensure that water quality/fish habitat is protected or enhanced and 2) the rationale for selecting the roads to be closed. This information is also fundamentally critical in defining short- and long-term cumulative effects (and necessary mitigating actions) associated with the implementation of the proposed sale.

We recommend that the EIS be revised to include updated road cards for all roads that would be built or modified as part of this project. As the mechanism for defining what is to be

done "on the ground," we believe it is critical that the road cards for the project reflect the proposed project as it would be implemented. We do not believe the road cards contained in the 1995 draft EIS reflect current project planning. We also recommend using the format and level of information contained in the road cards, Road Management Objectives (RMOs), and maintenance strategy terminology for the Crane and Rowan Mountain Timber Sales draft EIS. The information/format used in that EIS offer sufficient clarity and specificity for reviewers to understand how roads would be constructed, maintained, and operated with project implementation.

EPA - 5

The supplemental draft EIS provides a very general indication that 56 miles of existing roads and as many as 62 miles of new roads would be "closed" upon completion of timber harvesting activities. We were unable to determine what type of closure would be applied to the roads designated for closure. In order to protect water quality and fish habitat, we recommend that roads be closed consistent with State of Alaska regulations (see 11 AAC 95.320) and Forest Service BMP 14.24 (Soil and Water Conservation Handbook, FSH 2509.22). If the Forest Service intends to close roads "administratively" (i.e., restrict access, but not remove stream crossing structures or treat roads in a manner to reduce erosion), then we recommend that such roads be maintained consistent with State regulations (11 AAC 95.315) and Forest Service direction (BMP 14.20). The road closure and maintenance methods to be employed, along with a proposed closure and maintenance schedule, should be included in the EIS.

Purpose and Need

We are pleased to see that the Purpose and Need statement for this project does not contain a target harvest volume. We believe that the relatively wide range of timber volumes being considered is a direct consequence of the broad characterization of the Purpose and Need for the project. As we have indicated on past Tongass timber sales, we believe that the inclusion of a target volume in the Purpose and Need statement often resulted in the consideration and evaluation of a restricted range of project alternatives.

EPA - 6

The EIS indicates that the proposed project is designed to respond to a very limited number of Forest Plan goals and objectives (related to timber production and employment opportunities). It is our understanding that the entire set of goals and objectives presented in Chapter 2 of TLMP, which cover a wide array of topics, are applicable to all activities on the Tongass. Consequently, we are concerned that the discussion in Chapter 1 presents the public and the decision-maker with an incomplete characterization of the goals and objectives that are intended to be met with the implementation of the proposed project. We recommend that the Purpose and Need statement include a more complete discussion of the TLMP goals and objectives, and how the present proposal relates to them.

U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections

The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

Responses to U.S. Environmental Protection Agency

- EPA-1** As noted in the Supplemental Draft EIS, no new LTFs are proposed for Control Lake timber. Existing permitted facilities would be used and effects have already been considered in the permitting process for these continuing operations. The Final EIS reflects new information regarding LTFs, in particular for Coffman Cove and Thorne Bay. The Coffman Cove facility has been removed and will not be available for Control Lake timber unless some type of transfer facility is provided. At this time the Forest Service does not plan to place a facility in Coffman Cove, though evaluation of future LTF needs are continuing. If one is proposed it will be evaluated as appropriate in accordance with applicable laws and regulations.
- The Thorne Bay site is included in the KPC Long Term Contract Settlement Agreement and is planned to be removed at the end of KPC's use under the Agreement. The Thorne Bay site is not likely to be cleared from KPC activity in time to consider for use by Control Lake timber. Transfer of future timber at Thorne Bay is expected to use a method that would not allow logs to be put in the water, such as onto a barge.
- Timber from the Control Lake Project Area is expected to be offered for sale in many different sales. There is no way to predict who will purchase the sales nor, to what facilities they may need to use to process or, to access individual processing facilities.
- EPA-2** Please note that the EIS document itself is not intended to be an exhaustive file of all work that has been completed in the process of developing the EIS. For example the Planning Record contains various resource reports, field notes, analyses on each resource area, et al.
- The Final EIS, including unit and road cards, have been updated to reflect road access management information. Road closure, maintenance and other related road management information has been added to Chapter 4 of the Final EIS. Detailed road condition information, available at the Forest Supervisor's office in Ketchikan, was used along with project generated information to identify reconstruction needs for this project.
- EPA-3** As noted, full implementation of the Riparian Standards and Guidelines is included in all action alternatives and the Selected Alternative. As noted in the Supplemental Draft EIS and at the February 10, 1998 meeting, the components of watershed analysis as identified in the Forest Plan have been accomplished throughout the completion of the Control Lake EIS. A stand alone watershed document was not prepared as it would have been duplicative and was not expected to yield new information that would significantly contribute to the understanding of the effects of the alternatives in context of supporting a reasoned decision.
- EPA-4** See the response to EPA-1
- EPA-5** See the response to EPA-2. Updated road cards which include information on road closure rationale and methods are located in Appendix E of the Final EIS.
- EPA-6** Your comment regarding the Purpose and Need is noted. The Forest Plan desired future condition that is referenced in the Purpose and Need section incorporates current and future resource and use conditions and objectives. Also note that the Forest Plan LUDs and Standards and Guidelines used to design the proposed activities incorporate resource and use objectives and protection measures.

Alaska Forest Association, Inc.



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KETCHIKAN, ALASKA 99901-6599
Phone 907-225-6114
FAX 907-225-5920

March 9, 1998

Mr. Bradley Powell
Ketchikan Area Supervisor
Tongass National Forest
Federal Building
Ketchikan, AK 99901

VIA HAND DELIVERY

Re: Control Lake SDEIS

Dear Mr. Powell:

The Alaska Forest Association (AFA) has reviewed the January 1998, Supplemental Draft Environmental Impact Statement (SDEIS) for the Control Lake Timber Sales project, Tongass National Forest. AFA has more than 100 members and 200 associate members doing business throughout Alaska. AFA, its members, their employees and the timber dependent communities of Southeast Alaska depend on the Forest Service to provide economic timber sales of sufficient volume to meet the needs of the Southeast Alaska timber industry.

AFA believes that before the Forest Service can stabilize its timber sale program and meet the needs of the timber industry in Southeast Alaska, it needs to re-evaluate its timber demand analysis. The FS interpretation of market demand is leading to insufficient and uneconomic timber sales, creating a program which is at cross purposes with the agency's often stated goal of encouraging the growth of a reconfigured timber industry in Region 10.

Control Lake SDEIS economics are fundamentally flawed

1. While the FS program reflects an attempt to address the volume needs of the diminishing timber industry in Alaska, the FS continues to underestimate the market demand for timber products sold from the Tongass National Forest. The inadequate volume of timber available from the Tongass, the lack of consideration for economics in timber sale design, and the uncertainty of supply are serious impediments to sustaining a viable forest products industry in Southeast Alaska.
2. The FS acknowledges that the demand study in the Tongass Land Management Plan (TLMP) does not consider important factors that contribute to the demand for Tongass timber. The 1997 draft Brooks and Haynes report on which TLMP depends and the later final version of that report relied upon by the Control Lake SDEIS ignore the following significant factors in establishing a timber demand projection for the next 10 years (*See SDEIS, Appendix A-3*):

AFA - 1

AFA Comments, Control Lake SDEIS

- A new mill on Gravina Island owned and operated by Seley Log and Lumber Company;
- The proposed Sealaska/Louisiana Pacific JV which is intended to operate a veneer plant and sawmills on Revillagigedo and Annette Islands;
- The purchase and re-opening of the old APC facility in Wrangell by Silver Bay Logging, which will include a small log sawmill and a merchandising yard; and
- Changing markets in Japan which include a shift away from heavy dependence on round log imports, and an increased demand for lumber and manufactured wood products which could be produced in Alaska.

AFA - 1

3. The FS should not only acknowledge the importance of a predictable timber sale program in maintaining a viable forest products industry in Southeast Alaska, it should also consider the impact an unstable and unpredictable supply has on the timber industry. The lack of a stable timber supply, including the absence of sufficient volume under contract (pipeline volume), is hindering the investments necessary for the industry to remain competitive in the world marketplace (See SDEIS at 1-5).
4. The FS should concentrate on the timber supply side of the supply/demand equation and leave the demand side of the equation to those who will be making the investments. When the FS offers economically viable timber sales, the timber industry will be able to manufacture products to meet market demand which, in turn, will revitalize the Southeast Alaska economy.
5. The FS should provide the maximum environmentally feasible and economically harvestable volume from each NEPA project. This will help create an economic climate in which new investments can be made to build a new forest products industry infrastructure in Southeast Alaska. The FS should remember that after the closure of the pulp mills, it made a commitment to support and encourage a new primary and secondary manufacturing industry.
6. The Control Lake SDEIS fails to take into account the falldown in harvestable volume that will occur from on-the-ground application of the new TLMP Standards and Guidelines (S&Gs). AFA estimates the impact of the S&Gs, when applied on a unit by unit basis to Control Lake timber sales, at 20 to 30 percent. Therefore, under Alternative 11 the project area really offers only between 65.8 mmbf and 75.2 mmbf, instead of the 94 mmbf stated in the SDEIS.

AFA - 2

The FS could offer economically viable Control Lake timber sales

1. By using a clearcut prescription on more units, economically viable timber sales could be offered. Clearcutting would also increase the chance to manipulate species composition for future entry. Finally, clearcutting should be consistently applied in units that are suffering from moderate to high dwarf mistletoe infestations.

AFA - 3

2. Alternatives to clearcuts should be used only when they are both environmentally and economically viable. Unit prescriptions should be evaluated in terms of their economic impact to maximize the viability of the sales and to ensure the best economic return to the U.S. Treasury. AFA-3
3. Forested wetlands in Commercial Forest Lands (CFL) within the Control Lake project area invariably fall into the 8-20 MBF volume class. Frequently these lands include Alaska (yellow) cedar, although the quality is not high (predominantly #3 SL). This class has a large chip sawlog and utility log component. Thus, these stands are a major factor in turning FS offerings into deficit sales and this will likely be the case with some units in the Control Lake offerings. In Alternative 12, the 2,268 acres of wetlands included in the harvest acres seems high. The FS should attempt to utilize timbered uplands as substitute lands for these wetland areas to the extent possible. This would also contribute to protecting wetlands within the project area. AFA-4
4. Where TLMP S&Gs require structure to be left in a unit, the Forest Service should meet the retention requirements by leaving unmerchantable and low value timber to the extent feasible. AFA-5
5. By more carefully combining harvest methods with consideration for sale economics, by reducing the harvest percentage of very low quality and low volume timber stands, and by reducing road construction where feasible, the overall economics of the Control Lake project area could be improved. AFA-6

AFA offers the following specific unit recommendations

1. **VCU 575**
The North Thorne units in this VCU make for a potentially good timber sale. The Forest Service should consider extending the spur road beyond Unit 411 and picking up Unit 410 to increase the total volume and compensate for volume that will be lost due to application of the new TLMP standards and guidelines. Also, unless the Forest Service considers it likely that a later entry will pick up units to the north which were included in Alternative 12 but eliminated under Alternative 11, it should give consideration to adding Units 418 and 412 to the North Thorne offering, either as conventional or helicopter units. Adding Units 410, 412 and 418 could significantly improve overall sale economics in this VCU. AFA-7
2. **VCU 593**
A sale combining the units in this VCU is likely to have high logging costs due to the quantity and quality of the timber and high road construction costs. Since the harvest prescription for Unit 419 has been changed to helicopter, the Forest Service should consider adding Units 420 and 421 also as helicopter units. This will improve the viability of the sale by improving the overall sale economics, and will also help address the subsistence concerns related to extending roads too far into the Elevenmile area. Clearcut should be prescribed for Unit 419 to address mistletoe infestation. AFA-8

3. **VCU 595**

Units in the proposed Hard Steel sale in the Upper Steelhead drainage are likely to see heavy volume impacts from the application of TLMP S&Gs and from the difficult terrain. Every effort should be made to keep road construction and harvest costs at a minimum. For example, the Forest Service should carefully examine the alternative road route into Unit 431 to reduce total road building and to reduce potential impacts to streams from the high number of crossings in the original route. Making Unit 431 a helicopter unit does not appear to be an economically feasible option.

AFA - 9

The Forest Service should carefully weigh the option of using helicopter logging on some or all of Units 422, 423, 424, and 433. Silviculture implications for second entry should be a factor in decisions affecting Units 423 and 424. The combination of units in the Upper Steelhead offers an opportunity for the Forest Service to demonstrate some creativity in putting together a viable sale. The Forest Service should avoid simplistic solutions like just prescribing helicopter logging for all the units, since this could make the whole sale deficit.

4. **VCU 596**

AFA understands there is pressure to defer harvest on Units 409, 410, 416 and 417 due to their proximity to Rio Roberts Creek and the boundary of the Roberts/Honker old growth reserve (HCA). Units 416 and 417 contain significant volume (more than 4 mmbf, combined) and are important for the overall volume needs of the remaining Southeast Alaska timber industry. The boundary of the Honker withdrawal was discussed at great length and heavily scrutinized during the TLMP planning period. Opportunities to harvest higher volume old growth stands are now severely limited by the many withdrawals. Those that are still in the CFL land base should be made available.

AFA - 10

The goshawk nest near the northern boundary of Unit 416 is not a reason to defer harvest in that unit. TLMP S&Gs for the goshawk are more than adequate to protect the species, and harvest within the unit can be adjusted accordingly without losing the volume of the entire unit.

Units 409 and 410, which are now designated for helicopter yarding, should be offered with Units 416 and 417 in an east Control Lake sale. This would make an economic sale with relatively easy access to the 30 Road. If the Forest Service decides not to offer Units 416 and 417, or defers them indefinitely, Units 409 and 410 should be combined with Units 404, 406 and 407, to make a single larger helicopter offering.

5. **VCU 597.2**

AFA believes the falldown in Unit 439 after the application of TLMP S&Gs, will be particularly acute, especially in the western half of the unit. The Forest Service should consider modifying the unit boundaries to maximize recovery per mile of road, possibly dropping the western half of the unit, since available volume in that area will be greatly reduced by riparian retention. The Type A clearcut prescription should be retained to maximize recovery.

AFA - 11

AFA understands the Forest Service may be contemplating dropping Units 449 and 450 due to connectivity considerations. We encourage the Forest Service not to do so, since every bit of volume in this project area will become increasingly important to the industry as falldown occurs. If dropping these units is deemed necessary, the Forest Service should retain Unit 414 as a helicopter unit, combining it with Units 416, 418 439, 457, 458 and 459 in the proposed Rio Beaver sale in a way that results in a medium size sale with viable economics.

AFA - 11

The range of sale sizes in the Control Lake project area is acceptable

The stated intention of the Forest Service to offer a mix of sale sizes in the Control Lake project area is appropriate for the reconfigured timber industry in Southeast Alaska. Remaining operators in Southeast Alaska range from medium size to very small. It is important for the Forest Service to offer sale sizes ranging from 50 mbf to 20 mmbf. The tentative schedule for 1998 and 1999 in the Ketchikan Area indicates sales from the Control Lake project area will range in size from 100 mbf to 13 mmbf, and will include some single unit sales. This combination of sales will help meet the needs of independent operators, including those who are SBA qualified and those that are restricted to bidding on open sales. The demand for Tongass timber over the next 2 to 3 years is likely to result in all these sales being important, given the diverse needs of the various purchasers. The Forest Service should retain this proposed mix, and not succumb to any pressure to reduce or eliminate the sales on the larger side of this spectrum.

AFA - 12

Mitigation measures included in Alternatives 11 & 12 exceed TLMP requirements

1. Alternatives 11 and 12 of the Control Lake SDEIS demonstrate that biodiversity is a principal goal of the FS. Mitigation measures built into the SDEIS go far beyond the minimum requirements of TLMP and offer increased protection of fisheries and water quality resources based on the resource specialists' assessments of site specific conditions. The insertion by TLMP of old growth habitat reserves (HCAs, actually) in the Honker Divide, Rush, and Big Salt areas, and careful attention to visual quality objectives all add to the biodiversity remaining within the Control Lake SDEIS project area after harvest.
2. Harvest units and roads proposed for the Control Lake project were field-verified by resource specialists including fisheries biologists, hydrologists, soil scientists, and wildlife biologists. Resource specialists designated sites for implementation of required mitigation measures, such as TTRA buffers and BMPs directed by forestwide Standards and Guidelines. These specialists were also given the authority to recommend additional mitigation measures at varying sites as they deemed appropriate. These measures include:
 - extending no-harvest buffers to include adjacent floodplains, muskegs, or forested habitats for protection of wildlife, fisheries and water quality;
 - specifying selection methods including individual tree selection harvest in riparian buffers to reduce blowdown potential and to protect fisheries and water quality;
 - prescribing silviculture systems other than clearcutting, up to and including group or individual tree selection, for an entire harvest unit for resource protection; and

AFA - 13

- specifying split-yarding, partial suspension or full suspension and prescribing no-cut buffers on Class III streams and V-notches as appropriate to protect water quality.

AFA - 13

Other multiple use considerations are given adequate consideration in the Control Lake SDEIS, including under Alternatives 11 and 12

1. Wildlife considerations include:

- migration corridors which are more than adequate to provide for ungulate travel;
- deer, bear, wolf and other habitat is maintained by unit spacing, S&Gs and other measures;
- adjacent areas where development is prohibited help ensure viability for deer, wolves, bear, marten and other wildlife; and
- eagles are given 330 foot buffers around known key habitat.

AFA - 14

2. Fisheries are adequately protected by regulating activities within riparian management areas in accordance with TLMP standards. Published studies by M.L. Murphy of the National Marine Fisheries Service and recently completed studies by Martin Environmental, Inc., indicate that most of the benefit from riparian buffers is conferred by the first 66'. TLMP standards, which have been met or exceeded by the Control Lake SDEIS, are therefore more than adequate.

3. Subsistence concerns are adequately addressed:

- increased opportunity for rural subsistence from protection of key areas under TLMP, particularly the semi-remote recreation LUD in the Elevenmile area;
- deer that are inaccessible have a lower value for subsistence use, therefore more roads, providing better access, will increase subsistence opportunities;
- the FS should consider converting some of the unit roads to trails after harvest, instead of obliterating all temporary roads;
- HOWEVER, illegal subsistence harvest is not addressed by the SDEIS and is certainly a factor affecting deer populations.

4. Eco-tourism opportunities are adequately protected:

- as a relatively non-intrusive use, eco-tourism is virtually unrestricted in its opportunities on the Tongass; many more acres are available for this type activity than are available for resource extraction;
- within the Control Lake project vicinity, ample provisions are made for eco-tourism, including the Elevenmile semi-remote recreation LUD, the Honker Divide withdrawal and the nearby Karta Wilderness; and
- no harvest units will be visible from Eagle's Nest campground or from the Thorne River/Honker Divide canoe route, and only one unit will be visible from the Control Lake cabin.

The Alaska Forest Association appreciates the opportunity to participate in the planning of the Control Lake Timber Sales project. Please contact me at (907) 225-6114 if you have any questions concerning any of these comments.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jack Phelps", with a stylized, flowing script.

Jack E. Phelps
Executive Director

JEP/ram

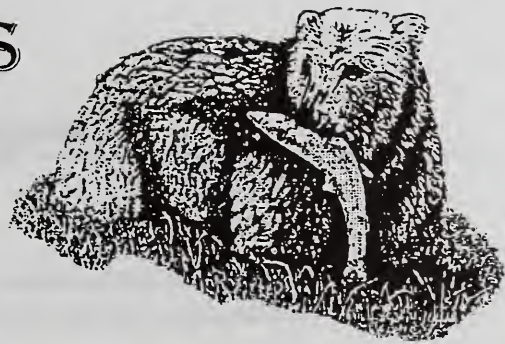
cc: AFA Board of Directors
Jim Clark, Robertson, Monagle and Eastaugh

Responses to Alaska Forest Association

- AFA-1** Your comments on timber supply are noted. Appendix A has been updated in the Final EIS to better reflect the ongoing changes in the SE Alaska timber industry.
- AFA-2** Based on additional field investigations all of the alternatives have been updated for the Final EIS. Estimated volumes for each unit has been changed to reflect the reviews.
- AFA-3** Harvest prescriptions were developed that are responsive to stand conditions, Standards and Guidelines, and other site-specific resource needs. Clearcutting prescriptions have actually decreased in the Final EIS. However, many of the non-clearcut regeneration harvest prescriptions will be accomplished by leaving many residual trees that are low volume, highly defective, or unmerchantable.
- AFA-4** As noted in the EIS forested wetlands are delineated using GIS processes. This process includes more areas of better drained forested wetlands which are usually more productive. The wetter forested wetlands are often associated with soils such as the Kitkun, Kaikli, Karheen or Maybeso soil series. No harvest is planned on these soils in accordance with Forest Plan Standards and Guidelines.
- AFA-5** Comment noted and refer to the response to AFA-3 above.
- AFA-6** Your comment is noted and this type of information was used in developing the Selected Alternative.
- AFA-7** Note that units in VCU 575 have been deferred until the overall conservation biology strategy is reviewed at the Forest Plan level in the future.
- AFA-8** Note that units in VCU 593 have been deferred from the Selected Alternative. Timber sale economics was one of the key factors in the deferral.
- AFA-9** Comment noted and Unit 595-431 is now planned to be accessed by the new road route as shown on the ROD map. Stream crossings and providing adequate buffers on Class I, II and III streams are of concern in the upper Steelhead drainage. Some of the proposed units may be changed to helicopter to reduce the crossings, or because the harvested volume may not be sufficient to pay for the road construction. Final implementation will determine these on a case by case basis. Future management of areas where helicopter is prescribed is a consideration when such decisions are made.
- AFA-10** The units in VCU 596 have been deferred in the Selected Alternative until the overall conservation biology strategy is reviewed at the Forest Plan level in the future.
- AFA-11** Units 439 and 450 have been dropped because they do not meet suitability requirements for timber production lands. Steep slopes, soil stability and stream buffers are the key considerations for these units. Unit 449 has not been included in the Selected Alternative until the overall conservation biology strategy is reviewed in the future. This unit was considered important as it would maintain a wider zone in its vicinity to assure connectivity between the Honker OTHR and Karta Wilderness.
- AFA-12** Comment noted. See also response to SEAC-1.
- AFA-13** The mitigation measures you describe are consistent with Forest Plan Standards and Guidelines. During implementation each proposed activity is developed to apply the Standards and Guidelines in conjunction with on-site conditions. Often the minimums described in the Standards and Guidelines are adequate, but on-site conditions can also require additional measures to meet the overall resource objectives embodied in the Forest Plan.
- AFA-14** Comment noted and refer to response AFA-13 above.

BEAR CREEK OUTFITTERS

FLY FISHING & LIGHT TACKLE GUIDE SERVICE



3718 El Camino Juneau, Alaska 99801
(907) 789-3914 phone/fax bearcrk@alaska.net

March 16, 1998

Forest Supervisor
Tongass National Forest
Ketchikan Area

RE: Control Lake DEIS

Dear Forest Supervisor:

We request that the Forest Service select Alternative 10 of the DEIS for the proposed Control Lake timber sale. We believe this alternative does the best job of protecting important fish and wildlife habitat. As business owners involved with Alaska fisheries, we feel the Forest Service should adopt practices that provide the highest protection for fish habitat throughout the Tongass.

BCO-1

We also understand that Alternative 10 was crafted by citizens who live and make a living in the area. In reading the revised Tongass Land Management Plan, the Forest Service states that they need to increase their communication with citizens through collaborative stewardship. This alternative, proposed by a diverse group of citizens, seems to be a great way for the Forest Service to create this type of relationship.

The local communities are relying on a timber sale that can provide opportunities to residents. Alternative 10 seems to meet their needs now and into the future, but it also protects areas that need it. We urge you to adopt Alternative 10.

Thanks for considering our comments.

Sincerely,

A handwritten signature in cursive script that reads "Michelle & Mark Kaelke". The signature is written in dark ink and is positioned above the printed names.

Michelle and Mark Kaelke
Owners

Responses to Bear Creek Outfitters

BCO-1 Your support of Alternative 10 is noted. Many of the recommendations of the Control Lake Citizen's Coalition have been included in the Selected Alternative.

Byron Brothers Cutting
1260 Millar
Ketchikan, AK 99901
(907) 225-6335

March 12, 1998

Mr. Bradley Powell
Forest Supervisor
Tongass National Forest, Ketchikan Area
Federal Building
Ketchikan, AK 99901

Re: Control Lake SDEIS

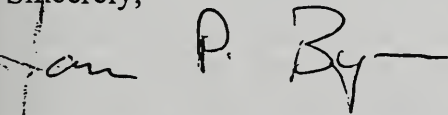
Dear Mr. Powell:

Byron Brothers Cutting is a small contract falling and bucking company. We employ 25 people. Like hundreds of other companies in Southeast Alaska, we depend on the Forest Service to provide enough economic timber sales to meet the needs of the Southeast Alaska timber industry. We are also members of the Alaska Forest Association (AFA) which represents the forest products industry throughout Alaska.

In the Control Lake Timber Sales Project SDEIS the Forest Service states its intention to offer a wide variety of sales from this project area. These range from single unit sales of 1 — 3 mbf to medium size sales containing several million feet. The FS should maintain these varying types and sizes of timber sale offerings. At this point all operators are in dire need of good, economic sales — whether they be small, medium or large operators. The FS's proposal for the Control Lake project sales will help restore the timber industry in Southeast Alaska by offering much needed timber to companies currently trying to reconfigure and revitalize the timber industry in Southeast Alaska.

BBC-1

Sincerely,



James P. Byron
Owner

Responses to Byron Brothers Cutting

BBC-1 Your comments regarding a variety of timber sale sizes is noted. The Selected Alternative is expected to be offered for sale in about 17 different timber sales ranging in size from about 0.2 to 11.2 MMBF.

Bradley Powell
Forest Supervisor
Tongass National Forest, Ketchikan Area
Attn: Control Lake SDEIS
Federal Building
Ketchikan, AK 99901

Dear Mr. Powell:

Thank you for the opportunity to comment on the Control Lake SDEIS.

We are offering comments on behalf of Control Lake Citizen's Coalition (CLCC); a diverse group of independent timber operators, Alaska natives, educators, business owners and fishermen.

CLCC was formed with the goal of reaching a consensus of different viewpoints on how the Control Lake area should be managed. Community members recognized the unique importance of this area for small timber operators and recreationists.

Almost all members of CLCC live on POW island.

With the new Forest Service focus on collective stewardship; this timber sale represents the first opportunity to do what you say--implement a timber sale local people really want. A timber sale developed by a cross section of the population.

Yet the Forest Service is following its old practice of coming up with a preferred alternative and trying to sell it to the public.

CLCC - 1

Interestingly, the citizen's alternative put forward in 1995 needs little modification to comply with the new forest plan.

CLCC supports the addition of six VCU 577 units 416, 417, 418, 423, 431 and 432 to replace those incompatible with the new forest plan that were in the original citizen's alternative.

The citizen's alternative 10 offers small sale opportunities to timber operators on a sustainable basis (see attached list identifying possible small sales). It offers local people the opportunity to live in their communities without the need to be uprooted to find the resource.

The Control Lake project area with its substantial road system, close access to log transfer and lumber barge facilities, valuable timber, and central access from all communities provides a unique opportunity to nurture a small value-added timber industry on POW.

In contrast, this area is not as important to larger timber operators as they can and do buy timber from all over Southeast Alaska.

The Forest Service, with its emphasis on large sales, is not realizing the value of the timber from the Control Lake area.

Alt. 10 clearly shows higher value for the timber in terms of miles of road built, volume per acre, and higher stumpage values. In fact, it comes out on top in every economic efficiency measurement.

CLCC-1

With a Present Net Value of 2.9 million dollars, it returns more money to the federal government than Alt. 11; yet it cuts 56 million board feet (mmbf) less timber. It conserves timber that can be cut on a sustainable basis for community benefit.

It is obvious the current preferred Forest Service alternative was drawn up as a result of several factors that did not consider the good of the community.

There seems to be a politics of fear driving Forest Service decisions.

There is the fear that if the maximum volume allowed is not cut as soon as possible that the Forest Service will be accused of not doing its job.

There is the fear that the Forest Service budget will be cut if it doesn't do the biggest project possible.

CLCC-2

The preferred alternative seems to be about putting up the biggest amount of timber for sale in an area with the fewest possible dollars.

There also seems to be a fear that if timber is not sold now; it will not be able to be sold later.

There is not even a pretense of sustainability in the Forest Service preferred alternative as the by decade harvest chart shows several VCUs with a 0 cut by the fifth decade in the hundred-year rotation cycle.

As such, many people are concerned that the Forest Service is not providing for stable, sustainable logging in the center of the island--the Control Lake project area.

The socio-economic analysis provided in Vol. 1 Chapt. 4 contains several errors which could lead the reader to draw incorrect conclusions about the costs of the alternatives.

CLCC-3

Chapt. 4 p.125 contains the statement that "road costs are substantially lower per MBF for Alternative 10 relative to the other alternatives." Yet table 4-54 lists road costs as being the same for Alt. 10 and 11 and only minimally less than alt. 12.

Furthermore, Table 4-59 lists pre-harvest costs per acre as being the same for all alternatives. Truthfully, the further

Forest Service personnel work from the road system to do preharvest layout and cruises, the more expense there is in laying out sales. Therefore, pre-harvest costs per alternative cannot be the same.

CLCC - 3

The result of this misinformation is to reflect more favorably on the cost structure of Alts. 11 and 12.

A. THE PURPOSE AND NEED FOR THE CONTROL LAKE PROJECT IS BASED ON FAULTY PREMISES.

One of the main arguments for putting a large amount of timber from the Control Lake area up for sale now is the need to put out a stable supply of timber.

Yet the purpose and need does not take into account the amount of timber already made available to larger timber operators through the KPC contract settlement like the Polk Inlet offering. Furthermore, it does not take into account future sales such as Stanley Cr. and Luck Lake that were not previously available to independent operators.

CLCC - 4

If the previous commitment to put up about 80 mmbf of timber for sale to independents is factored in; there is plenty of timber available without decimating the Control Lake area. Clearly, the large timber volumes being offered are an attempt to continue to serve the remnants of Ketchikan Pulp Co. and are not based on any existing need for timber.

Decimation of the timber base is what the preferred alternative for Control Lake is about.

Eighty percent of the acreage in the unit pool would be sold in the next five years. If we go as long as this time to the next forest plan; the industry would have to survive on 20% of the remaining acreage for the next decade if we assume all units would be sold.

The preferred alternative harvests half the timber volume of the pre-TLMP plan for Control Lake; yet only a quarter of the previous acreage is available for harvest under the new forest plan.

B. PRESENT PLANNING FOR THE CONTROL LAKE TIMBER SALE PUTS THE FOREST SERVICE IN VIOLATION OF THE TONGASS TIMBER REFORM ACT 705 d (1),(2), NATIONAL FOREST MANAGEMENT ACT OF 1976 AND THE FOREST SERVICE MANUAL.

CLCC - 5

The Control Lake timber sale violates TTRA by not assessing market demand from small timber operators and by not providing green timber to them from the project area.

Only four sales in Alt. 11 are less than 1 mmbf and the smallest, 200,000 mbf, is out of reach for most small timber operators. Furthermore, all of the smaller sales would be sold in

the first year and there would be nothing down the road for small operators to buy. This does not represent any real timber planning for small operators.

Most small operators all looking for sales in the 50-100 mbf range.

The 5 mmbf figure for small sales listed in the sale schedule in Volume II is a volume target and does not represent any real timber sale planning. The Forest Service has no firm idea where these sales will be located; they are not NEPA approved, and they do not represent any green timber.

CLCC-5

By trying to sell small operators only dead and down timber, the Forest Service is in violation of FSM 2436.5 which states in regard to the Special Salvage Timber Sale Program (SSTS) funded by NFMA. "Beginning in 1986, the Forest Supervisor shall not include sale volumes from sales set aside under SSTS in establishing shares or in the 6-month analysis."

These sales were intended to be in addition to a regular timber sale program; not the sole source of timber for small operators.

By not providing timber from the Control Lake project area to small operators; the Forest Service drives up the cost of the small sale program since all NEPA work on small sales must start from the very beginning.

Alt. 11 also violates NFMA Sec.14 (g)(I)(C) which says the Forest Service must "consider the economic stability of communities whose economies are dependent on such national forest materials."

Clearly, a timber sale plan that sells 80% of the unit acreage in the project area within five years; does not provide for community stability.

In fact, it undermines community stability in at least five ways.

CLCC-6

First, this sale seriously depletes the timber resource in the Control Lake area. The only way the Forest Service can make its argument that more cutting equals more economic activity and thus is best for community is to treat the timber in this area as an infinite resource.

We all know that the available timber in this project area is very limited and therefore the cut needs to be spread over time to provide for community stability.

Previous Forest Service work will not be lost because all the units have to be re-cruised and brought into compliance with the new forest plan.

Secondly, overcutting denies the Forest Service the

flexibility to respond to the market demand provisions of TTRA 705 d (1)(2). The Forest Service cannot supply timber which no longer exists.

Third, selling most of the wood in the next three years violates the economic efficiency standards of NFMA by selling the bulk of the wood at the bottom of the market.

CLCC-6

While private companies such as Sealaska have cut back their timber harvesting plans by 40% in response to the economic crash in Asia; the Forest Service plans to sell the same amount of timber in complete disregard to market realities.

Fourth, a timber sale plan that does not provide a continuing supply of green timber for the most dependent class of timber buyers, small operators, does not provide for community stability.

Finally, alt. 11 undermines community stability by failing to keep specified roads open.

Roads built only for timber harvest are of very limited value to the public. The social equity discussion provides no analysis of value lost by closing roads to the public. Just like there is no dollar value put on the recreational aspects of the forest.

CLCC-7

With the new HCA strategy, there is a refuge for wildlife so there should be less need to close roads. Yet alt. 11 shows no recognition of this fact. By asking the public to identify which roads should remain open, you are asking for implicit permission to close others.

CLCC believes no roads that the public pays for should be closed unless there is a clear conflict with existing law.

In contrast, Alt. 11 would result in a net loss of road open to the public with the closure of roads now open.

Road closures deny social equity by denying access to the elderly, disabled persons and those with limited time to enjoy the forest which are most of the working men and women on this island.

Berry pickers, photographers, fishing and tourism promoters and subsistence users are denied access to most national forest land in the Control Lake area through road closures.

Public lands are in danger of becoming a playground for the rich. As one petitioner said "We are in danger of becoming a prisoner on our own island."

Clearly, the Forest Service has a responsibility to ensure access to public lands. The failure to ask for and receive adequate funding for road maintenance is not adequate reason to abdicate its responsibility.

1994 budget documents showed a zero road maintenance budget for both the Craig and Thorne Bay ranger districts. If lack of funds were a valid reason for closing roads, every national forest road on the island would have to be closed.

CLCC - 7

Furthermore, the State of Alaska's desire to close roads in order to avoid providing adequate law enforcement funding for game management, cannot be construed as a valid reason for the destruction of social equity through road closures. There is no reason that Forest Service law enforcement could not be shifted into game law enforcement; especially in light of the federal takeover of subsistence management.

C. SUMMARY

The Forest Service identifies POW island as the primary region of influence for the Control Lake timber sale. It seems reasonable then that the residents of this island should have the most say in how timber sales here are managed.

For input, the Forest Service has asked community leaders through Prince of Wales Advisory Council what the community wants. However, none of the community leaders took the Control Lake issue to the communities for a referendum.

CLCC - 8

CLCC has went door-to-door as time permitted to ask community residents what they wanted to see in the Control Lake timber sale. Residents have signed petitions in support of Alt. 10 and their voice should be heard.

The Forest Service seems to be saying that economic efficiency does not matter because it is building social equity.

However, its social equity discussion fails to mention the job loss that will be associated with timber depletion after the initial five year sale period and the resulting loss of revenues to island communities.

The social equity discussion also fails to discuss the benefit of spreading the timber cut out over a longer period of time other than to say the timber will be more valuable later.

Forest Service equity discussions have seemed to justify the exclusion of small operators by saying these sales are more expensive to layout. Yet there is a failure to recognize that this is the segment of the forest market where there is real competition. Therefore, small operators pay more per thousand board feet for timber than larger operators.

There is no mention that less harvest now means more timber to harvest in the future.

These failures are the result of trying to justify a preferred alternative instead of looking at the data objectively.


Since Alt. 10 represents a cross section of community voices, the environmental community has agreed not to sue to block implementation of this alternative.

CLCC-8

We incorporate by reference the attached petitions with over 145 signatures. It is important to note that all of these people are concerned about the long term sustainability of forest resources and the local economy. They all support Alt. 10.

It is not too late to make the wise choice, alt. 10. It will genuinely benefit the whole community.

Jerry Jones



Independent timber operator-member
Control Lake Citizen's Coalition

Mike McKimens



Prince of Wales
Conservation League

Control Lake Small Sale Unit Notes

VCU #	Unit #	
594	420	Unit has five settings. Should be corridor logged to allow for natural yellow cedar regeneration. A part could be laid out for a small sale.
594	412	Shovel logging portion should be offered as a small sale.
595	431	Opportunity for small sales as unit is broken up by multiple streams.
595	423	This whole unit could be one small sale. This would lead to a better opportunity to save advanced regeneration.
595	418	Good small sale opportunity. Unit is 10.1 acres.
597	416	Unit could be broken into several small sales. Only 625 feet of road building.
597	418	Partial cut portion could be small sale.
597	419	Natural division in unit could provide two small sales.
597	420	Shovel logging portion should be small sale.
597	422	Unit could be divided into smaller sales.
597	430	Unit could easily be divided into two smaller sales as existing road divides unit.
597	448	Unit should be small sale.

In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative, represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Address	Date
1. Cindy Wade	Box 545 Craig AK 99921	3-2-98
2. Kim Brookshire	Box 168 Craig, AK 99921	3-2-98
3. Scott Brookshire	Box 168 Craig, AK 99921	3-2-98
4. Robert Buchanan	Box 1258 Craig, AK 99921	3-2-98
5. Doug Thomas	Box 308 Craig AK 99921	3-2-98
6. William Rick Jones Box 204 Craig		3-2-98
7. STEVE MUDD	Box 101 CRAIG AK 99921	
8. Joelene Peratrovich	Box 12 Klawock AK	3-2-98
9. F R E D Peratrovich	Box 12, Klawock AK.	
10. Robert Jones	Box 251	Craig AK 3-2-98
11. Mark Sullivan	Box 492	Craig AK 3-2-98
12. Karen & Pollen	P.O. Box 138	Craig AK-3-2-98
13. Colleen Hartley	Box 444	Craig, AK 3-2-98
14. Marilyn Stensing	Box 515	Craig, AK. 3-2-98
15. Mike	Box 752	Craig 3-2-98
16. Robbi Johnson	Box 1119	Craig 3-2-98
17. Denis M. Kuntz	Box 449	Craig 3-2-98
18. Randall K. Whitman	Box 271	Craig 3-2-98
19. Dr. Parker	Box 375	Craig 3-2-98
20. Sandra Mickelson	Box 204	Craig 3-2-98
21. Mickelson	Box 453	Craig
22. BRAD DARRETT	Box 343	Klawock 3/2/98
23. Arlan Buoy	P.O. Box 371	Klawock 3/2/98
24. Liz Seley	PO BOX 79	Craig 3/2/98
25. Al Suddell	PO 481	Craig 3/2/98
26. Kuyat	Box 487	Craig 3/2/98
27. Center	Box 36	Craig 3-2-98

In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Address	Date
1. Don Ludwigson	Box 767 CRAIG	2/26/98
2. Horn R. Horner	BOX 216 CRAIG	2/26/98
3. Leona A. Horner	P.O. Box 216 Craig	2/26/98
4. Michael S. Lueker	Box 389, Craig	2/26/98
5. Kathy Lee	Box 281 Craig	2/26/98
6. Maifuni Shapley	Box 281 Craig	2/26/98
7. Connie G. Gagnier	Box 305 Craig	2/26/98
8. Donald R. Gore	Box 337 Craig	2/26/98
9. Cynthia Gore	Box 337 Craig	2/26/98
10. Fred D. Shapley	Box # 67	2/26/98
11. Albert R. Dennis	Box 31 Craig	2 27 98
12. Elizabeth M. Dennis	Box 31, Craig	2/27/98
13. Sam Solomon	Box 532 Craig	2/27-98
14. Marge Jones	Box 193 Craig	2/27/98
15. Ed Bennett	Box 483 Craig	2/27-98
16. Mike Washmill	Box 191 CRAIG	2-27-98
17. J. Washmill	Box 191, Craig	2-27-98
18. Aaron Horn	Box 603, Craig	2-28-98
19. Wanda Herper	Box 603 - CRAIG	2-28-98
20. Stephen Shapley	Box 14 - CRAIG	2-28-98
21. Kimberly Baxter	P.O. Box 384 Craig	2-28-98
22. Brent Baxter	Box 384 Craig	2-28-98
23. Michael Kerner	Box 434 Craig	2-28-98
24. Vickie L. Horner	Box 434 Craig	2-28-98
25. Jeff & Martin	P.O. Box 425 Craig	3 1 98

In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative, represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Address	Date
1. Mike Shero	PO Box 1165 Craig	3/1/98
2. Danya Shero	PO Box 1165 Craig	3/1/98
3. Kim Patchka	PO Box 829 Craig	3/1/98
4. James Martinez	P.O. Box 143 Klawock	3/2/98
5. Gregory H. H. H.	P.O. Box 829 Craig	3/5/98
6. Ray S. S.	P.O. Box 534 CRAIG	3/6/98
7. Diane J. Warren	PO Box 269 Craig	3/5/98
8. Thomas J. Warren	" " " "	" "
9. Susan A. Shopley	PO Box 85 Craig	3/6/98
10. Susan A. Davenport	P.O. Box 135 Craig	3/8/98
11. Laura Davenport	P.O. Box 135 Craig	3/8/98
12. Jackson E. Stuart	P.O. Box 21 Craig	3/8/98
13. Robert W. W.	P.O. Box 463 CRAIG	3/8/98
14. Robert W. W.	PO Box 525 CRAIG, AK	3/8/98
15. Jimmy J. J.	Box 550 Craig AK	3/9/98
16. Dyan J. J.	Box 650 Craig, AK	3/9/98
17. Lemie M. H.	Box 97 Craig, AK	3/9/98
18. Anthony Leichly	Box 4 Craig AK	3-9-98
19. Paul E. Gray	Box 6 Craig AK	3/15/98
20. Chyl Tecto	Box 268 Craig, AK	3/15/98
21. Larry Rumble	Box 136 Klawock, AK	3/15/98
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With regard for the principals of sustained yield timber harvest and providing opportunity for small scale independent operators, I believe Alternative 10, "The Citizens Alternative", is the best choice for the control lake project area.

Name	Address	Date
1. <i>Valery White</i>	Box WWP Ktn 99950	3/5
2. <i>Elmer</i>	Box WWP Ktn AK 99950	3-5-98
3. <i>Mitch/Lily</i>	P.O. Box WWP Ktn 99950	3-5-98
4. <i>Ron Loucks</i>	PO Box WWP AK 99950	3-5-98
5. <i>Paul Simpson</i>	Box 1104 WWP AK 99929	3/5/98
6. <i>Gerald</i>	P.O. Box WWP Ketchikan 99950	3/5/98
7. <i>Gin Strandberg</i>	P.O. Box WWP Ketchikan 99950	3/5/98
8. <i>Matt Valley</i>	P.O. Box WWP Ketchikan 99950	3/11/98
9. <i>Jenny L. Vasson</i>	P.O. Box WWP Ketchikan 99950	3/11/98
10. <i>John Womert</i>	PO, Box WWP KTN 99950	3/11/98
11. <i>Linda Voorhees</i>	PO, Box WWP KTN 99950	3/11/98
12. <i>Elton Voorhees</i>	PO2 Box WWP KTN 99950	3/11/98

In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative, represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Address	Date
1. <i>Hordon & Charlene Douglass</i>	PO Box 18106 Coffman Cove.	3-7-98
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In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Signature	Address	Phone	Date
1. Scott Ownbey	<i>Scott Ownbey</i>	Box 1236 Craig	826-2827	2-27-98
2. Elgin Cook	<i>Elgin Cook</i>	Box 900 Craig	826-3755	3-2-98
3. Michael Houghton	<i>Michael Houghton</i>	Box 946 Craig	506-2457	3-3-98
4. Mark Gilmore	<i>Mark Gilmore</i>	PO Box 734 Craig	826-3734	3-3-98
5. Ellen Hannan	<i>Ellen Hannan</i>	Box 243 Craig	826-3407	3-13-98
6. Mary W. McLean	<i>Mary W. McLean</i>	Box 1236 Craig	826-2827	3-13-98
7. Brian Castle	<i>Brian Castle</i>	Box 243 Craig	826-3489	3/13/98
8. Steve Merritt	<i>Steve Merritt</i>	PO Box 332 CRAIG	826-2690	3/14/98
9. Patricia Patricia	<i>Patricia</i>	PO Box 92 CRAIG	530-7014	
10. John Tolleth	<i>John Tolleth</i>	P.O. 653 CRAIG AK 99921		3/14/98
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In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Address	Date
1. Mike McKinley	Box 304 CRAIG, AK 99921	2/28/98
2. Alice Clark	Box 225 CRAIG, AK 99921	2/28/98
3. Jacques Vaughan	Box 770 Craig, AK 99921	2/28/98
4. Jo Ann Smith	Box 420, Craig, AK 99921	2/28/98
5. Fishbeck	Box 376 Craig AK 99921	2/28/98
6. James See	203 Spruce Box 281 Craig AK 99921	3-1-98
7. Mike E. Bell	Box 647 Craig AK	3-3-98
8. Pam Sheehan	P.O. Box 376, Craig	3-3-98
9. Margaret Dunt	Box 514, Craig, AK	3-8-98
10. Wendy Seal	Box 456 Craig AK	3-9-98
11. Dan Smith	Box 238 Kluwuk AK 99925	3-12-98
12. Adria Morris	Box 1069 Craig AK 99921	3-12-98
13. A.H. Millie Stearns	Box 426, Craig AK 99921	3-13-98
14. David R. Rasmussen	Box 1156 Craig, AK 99921	3/13/98
15. Gail Rasmussen	Box 322 CRAIG, AK 99921	3/14/98
16. Dithari	Box 824 Craig AK 99921	3/14/98
17. K. Claussen	Box 52 Craig, AK 99921	3-14-98
18. Victoria Merritt	P.O. Box 332 CRAIG AK 99921	3-14-98
19. Kim Costello	P.O. Box CRAIG AK 99921	3-15-98

In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the Citizen's Alternative represents the best opportunity for sustainable logging in the Control Lake Project Area.

64

Name	Address	Date
1. Wayne Wulley	Box 1193 WRARD COOK AK 99928	3-11-98
2. Earl	7960 S. Tongass Hwy KTN, AK 99921	3-13-98

In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the Citizen's Alternative represents the best opportunity for sustainable logging in the Control Lake Project Area.

	Name	Address	Date
1.	Kim Kozzola	PO Box 5656 Ketchikan	3/16/98
2.	Juan E. Walsh	1252 Upper MILLAR	3/16/98
3.	Don C. Allen	3856 STONYASS	3/16/98
4.	Alan McKemmen	119 Gunter #1207 KTN, AK 99901	3-16-98
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In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the Citizen's Alternative represents the best opportunity for sustainable logging in the Control Lake Project Area.

Name	Address	Date
1. Adrian Nelson	P.O. Box 201	3/12/98
2. James J. Lockhart Jr	P.O. Box 396	3/12/98
3. Albert P. Cook	PO Box 3	3/12/98
4. John L. Blount	PO Box 361	3/12/98
5. Robert E. Hamlett	P.O. Box 102	3/12/98
6. Margaret O. Neil	95 Hyd	3/12/98
7. Gaddie Abel	Box 56 Craig	3/12/98
8. Thomas H. Abel	P.O. Box 358, Woonah AK	3/12/98
9. Joylin M. Young	Box 63 Hydaburg	3/12/98
10. Dawnne Walker	Box 81 Hydaburg	3-13-98
11. Cheryl Holter	Box 63 Hydaburg	3-13-98
12. Tim Young	Box 358 Hydaburg	3-13-98
13. Norman A.	Box 83 Hydaburg	3-13-98
14. Robert J. Robertson	Box 94 Hyd	3-13-98
15. Dept of School	Box 363 Hydaburg	3-13-98
16. Tutor Burgess	Box 46 Hydaburg	3-13-98
17. Norman F. Morrison	Box 86 Klauock	3-13-98
18. Smokey McNeill	Box 58 Klauock	3-13-98
19. David Kennedy	PO Box 161 Klauock	3-13-98
20. Patricia Souren	PO Box 106 Hydaburg	3-13-98
21. Robert Edwards	PO Box 46 Hydaburg	
22. Woodrow W. Morrison	Box 201 Hydaburg AK	3-14-98
23. Vicki LeCormu		
24.		

In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Address	Date
1. <i>Jody Cunningham</i>	PO Box 731, Craig-	2-28-98
2. <i>Craig Semper</i>	PO Box 796 Craig	3-15-98
3. <i>Sharif Sai fi</i>	1015 33rd St NW WASH DC-	3-15-98
4. SAMANTA AL-SAIFI	1015 33rd St NW Apt 410 WASH, DC	3-15-98.
5. <i>Nedra Koval</i>	28 TEELE AVE, SOMERVILLE MA 02144	3-15-98
6. <i>[Signature]</i>	PO BOX 1094 CRAIG, AK 99921	3-15-98

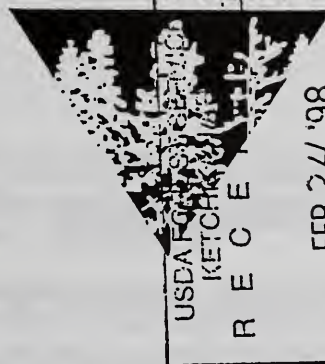
In view of the amount of timber removed from the timber base under the Forest Service HCA plan; I believe Alternative 10, the citizen's alternative, represents the best opportunity for sustainable logging in the Control Lake project area.

Name	Address	Date
1. <i>Gerald Wentworth</i>	C/o Box 101 Craig, AK	3-12-98
2. <i>Omara Dugan</i>	C/o Box 7443 Craig, AK	3/12/98
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Responses to Control Lake Citizen's Coalition

- CLCC-1** The efforts of the Control Lake Citizen's Coalition are appreciated. Note that Alternative 10 was important in development of the Selected Alternative.
- CLCC-2** Please note that all alternatives are fully consistent with the Forest Plan which provides for sustainability of multiple uses. The '0 cut' VCUs you indicate are primarily in LUDs which do not allow programmed timber harvest.
- CLCC-3** The socio-economic analysis you refer to has been updated in the Final EIS.
- CLCC-4** Note that there is no volume target associated with the Purpose and Need. Analysis indicates there is a need to provide timber volume both short term and long term from the Tongass National Forest.
- Note that each alternative in the Final EIS has been updated based on additional field investigations and to be in full compliance with the Forest Plan. The Selected Alternative will harvest approximately 57.9 MMBF. Note also that the suitable and available acres of commercial forest land is about 26,500 with 22,700 in mature or over-mature age classes. This indicates that about 3,600 acres, or 35-75 MMBF, per decade for the next 5 to 6 decades after implementation of the Control Lake is available for scheduled timber harvest. This does not include volume harvested in second growth stands that will be available during that time frame.
- CLCC-5** As noted in the response to SEAC-1, The Thorne Bay and Craig Ranger Districts small sale programs offer numerous timber sales annually that range from a few trees to 2.0 MMBF. These programs are planned to continue. Preliminary implementation planning indicate about half of the timber sales in the Selected Alternative will be in the 2.0 MMBF or less category. Other future projects such as Luck and Staney are expected to provide smaller sale opportunities in their respective decisions. Note that by including multiple potential sales in one NEPA process, the planning costs are generally lower. This should be the case on Luck, Staney and future project areas. Having a revised Forest Plan that addresses current issues should significantly help the future sales.
- The Forest Service does not agree that the Control Lake EIS violates TTRA or NFMA.
- CLCC-6** See response to CLCC-5.
- CLCC-7** Your desire to keep roads open is noted. Access management is an ongoing public and interagency process being conducted by the Thorne Bay Ranger District and you are encouraged to continue working with that process. Access management information, including road closures are in Chapter 4 of the Final EIS.
- CLCC-8** Note in the Record of Decision how the Forest Supervisor has taken efforts to include the desires of the Control Lake Citizen's Coalition in determining the Selected Alternative.

FOREST GUARDIANS



FEB 24 '98

FOREST SUPERVISOR OFFICE	
FOUR	PS
	DES
	TS SECRETARY
	ADMIN
	EDD
	LMS
	PAO
	PLANNING/IRM
	REC & LANDS
	TIMBER
	CRAIG RD
	KETCHIKAN RD
	MISTY FLOORS RM
	TRONNE DAY RD
	OTHER

February 18, 1998

Freedom of Information Act Officer
Tongass National Forest - Ketchikan Area
648 Mission Street
Federal Building
Ketchikan, AK 99901

- RE:
1. Request to be put on mailing list for all future timber sale decisions, E.A.s, E.I.S.s, and C.E.s
 2. Please forward our comments on any timber sales now in 30 day comment period (comments attached)
 3. FOIA request for economic analysis documents

Dear FOIA Officer,

This is a joint request on behalf of two non-profit environmental organizations: Forest Guardians and Forest Conservation Council. Both organizations are registered with the IRS as non-profit educational establishments. Our members include individuals and businesses throughout the United States whose interests are affected by management of national forest system lands. Our mission is to protect and restore the natural ecological conditions of such lands, so that the biological and economic values of these lands can be maintained in perpetuity. All correspondence to our organizations can be addressed to:

Forest Guardians and FCC
Attention: John Talberth
1413 Second Street
Santa Fe, New Mexico 87505

Our main phone number is: (505) 988-9126

If you have an old mailing address for Forest Conservation Council, please delete that address and send all future mailings to the address indicated above.

1. Request to be put on mailing list for all future timber sale decisions and E.A.s

Both Forest Guardians and Forest Conservation Council wish to be put on your mailing list to receive all future decision notices or decision memos for timber sales. This request applies to all timber sales that involve a commercial component, regardless of size. We wish to review and comment on these sales as early in the planning process as possible, so please also send us scoping notices as well as draft environmental assessments or environmental impact statements as they are published. Also send all final environmental assessments, environmental impact statements, and categorical exclusion notices for timber sales when they are completed.

If we are already receiving these notices from you, please disregard this request.

2. Please forward our comments on any timber sales now in 30 day comment period

In the event that there are timber sale projects currently in the 30 day comment period established by Forest Service regulations, please forward the comments below before the end of that comment period. We are submitting these comments to you because we cannot be assured that timber sale E.A.s that are now ripe for comment will reach us through the mail in time. We wish to preserve our rights to review any final timber sale decisions that are made, so it is necessary for us to provide some comments on these sales now. The comments below address economic issues that are common to all timber sales, regardless of size or location. If we have already commented on any particular sale now in the 30 day comment period, please supplement our comments with those provided below.

Forest Supervisor

Comments on any timber sales currently in the 30 day comment period

Forest Guardians and Forest Conservation Council are tax exempt, public interest organizations with individual and business members throughout the United States. We are concerned with the adverse economic effects of the national forest logging program, and the Forest Service's failure to quantify such effects at the project level or for the program as a whole. The logging program increases costs of water purification and filtration, decreases the value of private timberlands, unfairly competes against alternative fiber and building material businesses, increases wildfire risk, increases repair and maintenance costs for highways and public roads, and decreases the number of jobs in recreation, tourism, fisheries, and alternative forest products.

FG-1

In addition, the ecosystem service values of standing forests, especially native forests, including their value in providing clean water, mitigating floods, supporting recreation, hunting, fishing, and wildlife viewing, enhancing long term forest productivity, and mitigating agricultural pests are systematically undervalued or not valued at all. Finally, the opportunity costs of the logging program, which includes both the uses forgone on areas logged as well as the alternative uses of the money now spent on the logging program have not been evaluated on a project basis or for the logging program as a whole.

Before a final decision is made on any current timber sales, the Forest Service has a duty to fully consider the external costs and opportunity costs of the logging program, and incorporate those costs into planning decisions so that the true costs and benefits of the program to the public can be determined. Thank you for the opportunity to comment, please keep us on the list to receive all future documents related to your timber sale program.

Sincerely,


John Talberth

Forest Guardians/ Forest Conservation Council

3. FOIA request for economic analysis documents

Please provide the following documents pursuant to the Freedom of Information Act, 5. U.S.C 552 and the Department of Agriculture Regulations implementing the Act. If these documents are part of a larger document, such as an EIS for the Forest Plan, we will accept the larger document as long as the specific page numbers of the documents we are requesting are identified:

(A) All documents produced by the U.S. Forest Service or in the agency's or the federal government's possession that quantify the adverse economic effects and economic costs of the commercial and personal use timber sale/ permit program on this national forest. This includes, but is not limited to documents that quantify the economic value of:

- (i) loss of jobs and business revenue related to fisheries, recreation, tourism, alternative forest products and hunting;
- (ii) decreased private land values in "matrix" of industrialized federal public land;
- (iii) lost jobs and income to private timberland owners, especially those utilizing more costly but more ecologically sustainable logging techniques, who face unfair competition from subsidized federal timber;
- (iv) lost jobs and income to alternative and recycled fiber and construction material businesses who face unfair competition from subsidized federal timber;
- (v) increased costs for water quality management incurred by states, counties, and municipalities in watersheds subject to sedimentation from public lands logging;
- (vi) increased costs related to wildfire damage and wildfire suppression for fires which originate in timber sale slash;
- (vii) increased road maintenance costs incurred by counties and states forced to implement repairs of roadways and bridges damaged by logging-induced landslides and damaged by heavy log truck traffic;
- (viii) death and injury on roadways caused by increased heavy truck traffic related to public lands logging;
- (ix) lost hydro-electric generating capacity from reservoirs clogged by logging-induced siltation, and;
- (x) flood damage, including loss of property and farmland in watersheds damaged by public land logging operations.

(B) All documents produced by the U.S. Forest Service or in the agency's or the federal government's possession that quantify the non-timber economic values associated with this national forest. This includes, but is not limited to documents that quantify the economic values associated with:

- (i) the national forest's role in regulating the flow of water, specifically, their role in mitigating flash floods and other catastrophic precipitation events;
- (ii) the national forest's role in purifying water for downstream users;
- (iii) the unlogged portion of this national forest's role in maintaining long term forest productivity. Native forests provide a source of native organisms and ecological processes vital to regeneration and forest development in surrounding areas. In addition, older and larger trees in this national forest are a genetic reservoir of immense value to reforestation efforts;
- (iv) non-timber uses of the national forest including gathering of forest products, recreation, hunting, fishing, and wildlife observation, and;
- (v) the national forest's role in mitigating pests. Structurally diverse forests in unlogged areas support bird and bat species that prey upon insects and rodents harmful to forest and cropland health.

(C) All documents received from the Washington office, the regional office, or internal to this national forest providing guidance or direction for how to assess the economic effects of the timber sale program or individual timber sales, as well as documents describing the procedures used to conduct the quantitative and qualitative analysis described in part "D" of this request, below.

(D) The most up-to-date document describing and summarizing the results of the specific quantitative and qualitative analysis this forest relies upon to insure that national forest lands are being managed in a manner that "maximizes long term net public benefits" pursuant to 36 C.F.R. 219.1(a).

Since the Freedom of Information Act provides for non-disclosure of documents and portions of documents that are exempt from disclosure, Forest Guardians and Forest Conservation Council request that all non-exempt portions of documents covered by this request be made available to us, and that the Forest Service specifically identify any documents or portions of documents that will not be disclosed, and justify those non-disclosures.

Because this information is vital to thousands of our individual and business members nationwide who wish to participate more effectively in the forest planning process, and because Forest Guardians and Forest Conservation Council will make this information accessible to the public, we request a waiver of any fees associated with providing the information requested above. We believe we are entitled to a fee waiver for the following reasons:

- (a) the subject of this request will help the public understand the operations and activities of the government. Forest Guardians and FCC's members have identified the information requested as vital for monitoring the economic impacts of management activities throughout the national forest.
- (b) the information requested is highly informative, permitting our members to understand the cumulative economic impacts of management activities on a forest-wide scale.
- (c) the information requested will enhance public understanding of management activities on the national forest by providing information on the economic impacts of current management, as well as information about internal Forest Service procedures for assessing economic impacts.
- (d) Forest Guardians and FCC have no commercial interest in the information requested. We are a tax-exempt, public interest organization that is compiling this information for use by our members and the general public. We do not charge fees or resale this information in any way.

Please don't hesitate to call me to clarify this request. I can be reached at (505) 988-9126. Thank you for your prompt reply, and for forwarding the request for future timber sale information as well as our comments on existing E.A.s to the appropriate staff.

Sincerely,


John Taberth

for Forest Guardians and Forest Conservation Council

FG-1

The social and economic values included in the comment are best addressed at a much larger scale than the project level. The Forest Plan has addressed these in great detail and incorporated those values into the Land Use Designations, Standards and Guidelines used to design and implement projects. Project analyses on pertinent social and economic factors have been analyzed and incorporated into the Control Lake project design. This effort complements the broader Forest Plan analysis.

Forest Supervisor
Tongass National Forest
Federal Bld.
Ketchikan, Ak 99901

Attn: Control Lake
March 13, 1998

As you may know, FSEEE has appealed the Tongass Land Management Plan (TLMP), which sets the goals and objectives for this project area. Please accept these supplemental comments.

Significance of Honker Divide:

Honker Divide is one of the most significant areas on the Tongass in terms of scenic beauty, wildlife and fisheries resources.

FEE1 - 1

Citizen's Alternative:

Collaborative stewardship means bringing people together to share decision making and outcomes. The Control Lake Citizens' Alternative is an example of collaborative stewardship which the FS would be wise to endorse. This alternative embraces and recognizes the concepts of sustainability and support of small operators. It respects the needs of wildlife and protects the interests of small operators on Prince of Wales Island. FSEEE supports the Citizen's Alternative.

FEE1 - 2

Purpose and Need:

The Purpose and Need Statement in the Control Lake SDEIS violates the National Forest Management Act (NFMA) and the National Environmental Policy Act (NEPA). The Forest Service has failed to "rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. §1502.14.

FEE1 - 3

By stating in the purpose and need section that logging in the Control Lake Project Area is necessary to reach "desired future conditions," the Forest Service is not allowing for meaningful consideration of a full range of alternatives. Contrary to the broad direction of TLMP, the Purpose and Need statement contained in the Control Lake SDEIS cites only TLMP goals and objectives that justify logging 94 mmbf.

The Forest Service is continuing to violate NEPA by preestablishing the outcome of the Control Lake Project planning process. The Forest Service has consistently used timber targets which predispose outcomes. In the SDEIS, Vol. II, Appendix A, table 2 under the heading, Ketchikan Area FY 98, the Forest Service has over 48mmbf of timber scheduled for sale from the Control Lake project area.

FEE1 - 3

In table FY 99, the Forest Service has scheduled another 38 million board feet for sale. Finally, in table FY 00, the Forest Service will schedule an additional 12mmbf from the Control Lake Project area. According to the Forest Service's own published schedule, the agency plans to sell 94mmbf of timber which happens to be the same amount called for in the preferred alternative. The Forest Service has first established timber production goals and then formulated its' alternatives in a manner guaranteeing that the planners would reach these goals.

Issue: Forested Wetlands

Forested wetlands seem to be one of the most vulnerable wetland types to clearcut timber harvest. In question is the regeneration capability and sustainability of these sensitive and slow growing sites. Scant data exists which can be used to predict the effects of management activities on forested wetlands on the Tongass. One 1979 unpublished report from Kupreanof Island in southeast Alaska, identifies stunted second growth stands, chlorotic seedlings and pole-sized trees on Kaikli, Karheen and Maybeso soil series. A growth reduction occurred abruptly when these trees reached 7 to 10 years of age. The analysis of soils showed the stunted trees were deficient in nitrogen. Studies in other areas suggest similar conclusions on the effects of logging on forested wetlands.

The Forest Service has made a decision to effect 1,785 acres of wetlands, and place 394 acres of roads in wetlands in the preferred alternative while the law advises to 'not adversely impact wetlands.' Please explain.

FEE1 - 4

Marten Standards:

I do not see anything about the marten standards and guidelines. Please update the marten standards and guidelines and their implementation in the Control Lake sale.

FEE1 - 5

Units recommended for deletion:

- The units of most concern are 411,419,420,424,425 in the upper Thorne River. Ridge top to ridge top protection for the Honker Divide is essential.
- Units 431 & 432 near Hatchery Creek.
- All units in the roadless area near the Elevenmile Peninsula. No roading or logging to protect subsistence hunting, fishing and gathering.
- All units along Rio Roberts 596 -409,410,416,417. Rio Roberts is an important watershed with concerns of wolves, roads and watershed protection.
- Steelhead units 420, 421,422,424,431,433- overflow area for the Steelhead Creek wolf pack. This area should not be roaded or logged.
- All units in 576 and 577 because of the Honker Divide wolf pack.
- The unit above Snakey Lakes - 401

FEE1 - 6

Jackie Canterbury
FSEEE
Alaska Coordinator

Jackie
(Canterbury)

Responses to Forest Service Employees for Environmental Ethics, Jackie Canterbury Letter

- FEE1-1** Your comment regarding Honker Divide is noted.
- FEE1-2** Alternative 10 was influential in developing the Selected Alternative. The efforts of the Control Lake Citizen's Coalition is appreciated.
- FEE1-3** The Forest Service does not agree that the Purpose and Need violates NFMA and NEPA. Note there is no volume target associated with the Purpose and Need. Analysis indicates there is a need to provide timber volume both short and long term from the Tongass National Forest. Fourteen alternatives have been considered throughout the process of the Control Lake EIS. Many of the alternatives have been analyzed with different levels of activities (i.e. Alternative 10 in the Supplemental Draft EIS and the Final EIS.). Note that all alternatives have represented different responses to the significant NEPA issues identified through numerous public involvement activities.
- See response to SEAC-8 and SEAC-9.
- FEE1-4** See response to SEAC-4.
- FEE1-5** Information on the marten has been updated to better reflect the Forest Plan in the Final EIS.
- FEE1-6** Your comments on specific units are noted. The Selected Alternative has deferred the units in VCU 575 (411, 419, 420, 424 and 425), units associated with Rio Roberts watershed (596-409, 410, 416 and 417), Steelhead unit 424, and all units associated with the Elevenmile on the eastern portion of VCU 593. Other units have been included in the Selected Alternative.

Received 3/16/98

FOREST SERVICE EMPLOYEES FOR ENVIRONMENTAL ETHICS**P.O. BOX 11615
EUGENE, OR 97440
(541) 484-2692****BY FACSIMILE TRANSMISSION**

March 16, 1998

**Forest Supervisor
Tongass National Forest, Ketchikan Area
Attn: CONTROL LAKE SDEIS
Federal Building
Ketchikan, AK 99901**

Dear Forest Supervisor:

Thank you for the opportunity to comment on the Control Lake DEIS.

Timber Demand

As you may know, FSEEE has appealed the Tongass Land Management Plan (TLMP), which sets the goals and objectives for this project area. You may obtain a copy of our appeal from your regional office. Among other things, the appeal asserts that TLMP fails to properly balance protection of non-timber uses with meeting market demand for timber over the planning period, as required by the Tongass Timber Reform Act (TTRA). TLMP's failure results from its arbitrary designation of 267 mmbf as the allowable sale quantity (ASQ), an amount far exceeding the agency's own contemporaneous projections of timber demand over the planning period. See Brooks and Haynes, "Timber Products Output and Timber Harvests in Alaska: Projections for 1997-2010."

FEE2 - 1

Notwithstanding the Forest Service's apparent intent to sell less timber in the up-coming several years than allowed by TLMP's overstated and illegal allowable sale quantity (ASQ), the damage TLMP's inflated ASQ does to the land base available for multiple-use protection is real and substantial. But for the inflated ASQ, the amount of old-growth forest, such as that proposed for logging in the Control Lake DEIS, available to be protected for fish, wildlife, water quality, and other resources would be substantially greater. The Control Lake timber sale(s) would foreclose the opportunity to protect these forests in a revised TLMP, as FSEEE has requested in its TLMP appeal.

FSEEE's Tongass Land Management Alternative

FSEEE submitted a comprehensive land management alternative for consideration in the TLMP revision process. The Forest Service arbitrarily refused to consider our alternative among the range of alternatives assessed in TLMP's final EIS. We have protested this violation of the National Environmental Policy Act in our TLMP appeal.

FEE2 - 2

The Control Lake timber sale would foreclose full consideration and implementation of FSEEE's alternative plan for the Tongass. For example, this sale proposes to log old-growth forests that FSEEE's plan proposes for protection and fails to provide the stream protection measures called for by FSEEE's alternative.

In sum, this sale's foreclosure of FSEEE's alternative land management plan, without adequate consideration by TLMP, violates NEPA. If you do not have a copy of FSEEE's alternative for review, please contact us and we will send you one.

Endemic Mammals

As FSEEE documented in its TLMP appeal, TLMP fails to provide for a viable population of endemic mammals and the marten. Insofar as there is habitat for these species that would be harmed by this timber sale, this sale violates NFMA's duty to protect viable populations of all native vertebrate species. FSEEE asks that the sale's supplemental EIS evaluate the presence of endemic mammals, marten, and their habitats in the sale area, the effect the sale would have on these species, and the adequacy of TLMP's protective measures for these species.

FEE2 - 3

Clearcutting

TLMP defends clearcutting as the appropriate dominant silvicultural system on the Tongass. In this respect, the Tongass is unique among all 156 national forests as the only forest to buck the nation-wide trend toward decreased reliance on clearcutting. For 25 years, since the Church Clearcutting Hearings of the early 1970s, the U.S. Congress and American people have been steadfastly telling the Forest Service that they don't want their public lands clearcut. 16 U.S.C. § 1604(g)(3)(F)(i). And, for 25 years, the Forest Service has slowly been getting the message. Chief directive of June 4, 1992. Today almost all national forests have reduced their use of clearcutting substantially. Clearcutting on the national forest system has dropped from 283,000 acres annually in 1988 to 133,000 in 1993, and is projected to drop to 50,000 by 2000. Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan (1995) at III-38. Today clearcutting accounts for fewer than 15% of all acres harvested and is projected to drop to 4% by 2045. *Id.*

FEE2 - 4

FSEEE's TLMP appeal rebuts each of TLMP's defenses of clearcutting, as follows:

1. Forest health reasons:

Dwarf mistletoe is a ubiquitous, native western hemlock parasite that reduces tree growth, lowers fiber quality and provides an entry for decay fungi. Mistletoe creates important habitat niches for many species, including marbled murrelets. Generally trees out grow their initial mistletoe infections; the parasite rarely, if ever, is a direct cause of tree mortality. The Chief's 1992 policy allows clearcutting only where lands require "rehabilitation" from disease. Thus, dwarf mistletoe simply cannot be used to justify clearcutting. These stands do not require rehabilitation; they are healthy forests that sustain a wide variety of forest uses, including timber. To do so, as the TLMP does, allows the disease exception in the Chief's policy to swallow the general rule that clearcutting should be utilized only in rare circumstances. Nor does dwarf mistletoe adversely affect "forest health." It is a natural part of the biological diversity of the native forests of southeast Alaska. There is no evidence that dwarf mistletoe incidence has gone beyond the bounds of natural variability, nor does TLMP even attempt to evaluate this central concept of forest health and ecosystem management.

The Chief's policy allows clearcutting to "rehabilitate" stands adversely impacted by windstorms. TLMP argues for clearcutting because it decreases blowdown within harvest units (there's nothing left to blowdown), but admits the practice increases blowdown along cutting boundaries. *Id.* at G-8. Regardless, neither justification fits the Chief's criterion for rehabilitation after catastrophic blowdown. Nor does blowdown adversely affect forest health. Down trees are a natural part of a healthy forest environment. They play important roles in nutrient recycling and wildlife habitat. In fact, TLMP requires down trees be left after logging in many management prescriptions. TLMP cannot on the one hand argue that blowdown is "bad" to justify clearcutting and on the other hand argue that it must provide for down logs because they are good for biological diversity.

Clearcutting is also allowed under the Chief's policy to reduce the adverse effects of logging damage, and TLMP argues that clearcutting does so. *Id.* at G-8. However, clearcutting is not "essential" to accomplish this end, as the Chief's policy further requires. Other silvicultural techniques, such as group selection, and other logging methods, such as helicopter logging, can accomplish the same reduction in logging damage as clearcutting. TLMP's failure to even consider these alternatives in its assessment of clearcutting violates the Chief's policy and NFMA's directive that clearcutting be used only where it is optimal.

TLMP argues that clearcutting should be permitted because it will improve forest productivity. *Id.* at G-8. Even if true, the Chief's policy does not grant any forest productivity exception for clearcutting. Nor is forest productivity a component of forest health. According to TLMP, Alaskan soils in old-growth forests have naturally "low soil temperatures, poor soil aeration, excess water, and deep humus mats." *Id.* Thus, by TLMP's admission, this is the natural, healthy condition of these forests. These forests are already healthy; they don't clearcutting to make them any healthier.

2. Clearcutting favors spruce.

TLMP provides no evidence that the Tongass suffers from a spruce shortage. Absent such a showing, there is no rational justification for believing that spruce needs whatever additional assistance clearcutting might provide over group selection. In fact, TLMP fails even to consider the option of group selection as a spruce reproduction technique, although there is every reason to believe group selection would offer the same "open environment" and "increased sunlight" provided by clearcutting.

3. Clearcutting requires less road development.

Road criteria are not among the factors the Chief's policy allows to justify clearcutting. Thus, this justification, even if true, violates the Chief's directive. Further, helicopter logging eliminates the need for many roads, regardless of silvicultural system.

4. Clearcutting provides viable harvest economics.

Once again, harvest economics is not among the factors the Chief's policy allows to justify clearcutting. Thus, even if true, this justification violates the Chief's directive. In any event, it is irrational for the Forest Service to use harvest economics to justify clearcutting when the agency loses tens of millions of dollars each year through its timber sales program. If the agency really cared about economic efficiency, it would simply stop selling timber on the Tongass.

5. Clearcutting provides excellent natural regeneration.

The quality of regeneration is not among the factors the Chief's policy allows to justify clearcutting, so long as minimum stocking levels are met. Ironically, by TLMP's own admission, clearcutting provides not excellent regeneration, but excessive regeneration. *Id.* at G-9 ("Stocking control is usually necessary between the ages of 15 and 20, and almost all sites require some degree of stocking control."). The fact is, TLMP fails to demonstrate that regeneration is a concern for group selection or other non-clearcutting silvicultural systems.

6. Clearcutting is compatible with the use of standard logging systems.

Again, no where does the Chief's policy speak to logging systems as a permissible justification for clearcutting. It defies commonsense that the reluctance of southeast Alaska's timber industry to invest in appropriate logging equipment should justify TLMP's decision to violate national policy disfavoring clearcutting.

7. Clearcutting provides a viable timber management program.

This last justification is the lamest of all. First, once again, it is not among the Chief's permissible justifications. Second, it alleges that clearcutting is necessary to "meet our contractual obligations to the long-term Contractors." Well, there ain't none anymore. This is one more example of TLMP living in the past. Third, TLMP claims that clearcutting is necessary to provide a timber program large enough to meet demand. But, as discussed above, TLMP grossly overstates demand. Finally, TLMP claims that clearcutting "permits the

FEE2-4

allocation of large parts of the Forest for other than timber management purposes." But, so would reducing the allowable sale quantity to a level consistent with actual demand, without any clearcutting.

FEEZ - 4

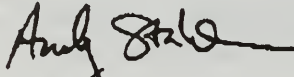
In sum, to the extent that the Control Lake timber sale relies upon clearcutting, FSEEE believes that reliance is illegal, arbitrary and capricious, and violates the Chief's directive. We do not believe that the Forest Service can justify clearcutting under the law and challenge this sale's planners to address head on the points we raise above.

Summary

We recognize that district and area-level staff are faced with a difficult job of implementing a forest-wide plan that is poorly conceived and illegal. We would have preferred to have the issues we raise in these comments to have been acknowledged and resolved by TLMP. They have not been. It would be imprudent to proceed with on-the-ground implementation of a fatally flawed TLMP. Thus, we raise these issues here in the hope that the Forest Service will re-think TLMP and grant the relief we seek in our TLMP appeal. If it does not, we may appeal this timber sale or seek its stay pending resolution of our TLMP appeal.

FEEZ - 5

Sincerely,



Andy Stahl
Executive Director

Responses to Forest Service Employees for Environmental Ethics, Andy Stahl Letter

- FEE2-1** Your comments on your appeal of the Forest Plan are noted. The Forest Service does not agree that implementation of the Selected Alternative will foreclose options to protect fish, wildlife, water quality and other resources.
- FEE2-2** The Forest Plan has been approved and your appeal is pending. The Control Lake project is fully consistent with the Forest Plan.
- FEE2-3** The Control Lake Final EIS has been updated to reflect the Forest Plan regarding marten and small endemic mammals.
- FEE2-4** The Final EIS and Record of Decision discuss the selection of silvicultural systems including where clearcutting is considered the optimal method of harvest. The clearcutting with reserve trees ranges from less than 20 percent in Alternative 12 to nearly 35 percent in Alternative 10. The Selected Alternative includes about 26 percent clearcut harvest with reserves.
- FEE2-5** Comment noted.

Steve Kimball, District Ranger
USDA/USFS
Thorne Bay Ranger District
Box 19001
Thorne Bay, AK 99919

February 14, 1998

Regarding: Control Lake Supplemental Draft EIS

Dear Sir,

As you know the Glacier Grotto is a state wide organization of citizens that are concerned with protecting caves and other natural resources. Alan Murray the current President of the Glacier Grotto has asked me to write this letter in behalf of all grotto members.

GG-1

The Glacier Grotto would like to go on record supporting Alternative 10 for the Control Lake Timber Sale. With the following clarifier.

GG-2

We recognize all the currently proposed alternatives are thought not to have any significant caves or karst features. However, we also know how easy it is to miss caves during the timber layout process. It should be recognized that not all significant caves are in karsted areas. Tectonic, and talus caves are also frequently found in Southeast Alaska. Under the National Caves Resources Protection Act of 1988 tectonic and talus caves also warrant evaluation for significant status.

GG-3

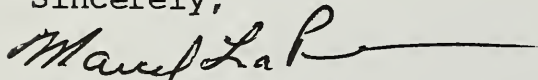
After reviewing the currently proposed alternatives it is obvious to us that Alternative 10 best fits the needs of Southeast Alaska's residents with the least environmental impact. We recognize the importance of the timber industry here in Southeast. We also recognize the tremendous transformations the timber industry is currently experiencing. You, the Forest Service will be making decisions that will shape the future of this area. Therefore we feel in order to build a sustainable timber industry, timber practices like Alternative 10 must be implemented.

In recent months the over building of roads within National Forests has come under fire. With the exception of Alternative 1, Alternative 10 would require the least amount of road building. We feel it is not fiscally responsible for the USDA/USFS to continue over building roads when we the American taxpayers can't afford to manage the current roads within our National Forests. The cost associated with managing the over abundance of roads will also heavily impact the Tongass in the future.

We would ask you to strive to live up to the USFS mission of Caring for the Land and Serving People. Adopting Alternative 10 will best fit that mission statement.

Thank You.

Sincerely,



Marcel LaPerriere, Past President
Glacier Grotto
55 Main Street
Ketchikan, AK 99901

Responses to Glacier Grotto

- GG-1** Your support of Alternative 10 is noted.
- GG-2** Your comment on cave protection is noted.
- GG-3** Concepts included in Alternative 10 were important considerations in developing the Selected Alternative.



Prince of Wales Conservation League
PO Box 1109
Craig, AK 99921

Phone/Fax 907.826.3770

March 15, 1998

Bradley E. Powell
Forest Supervisor
Tongass National Forest, Ketchikan Area
Attn: Control Lake SDEIS
Federal Building
Ketchikan, AK 99901

Dear Mr. Powell:

The Prince of Wales Conservation League (POWCL) is a volunteer citizen conservation organization founded in 1988. Individual members include local citizens from every walk of life. POWCL is dedicated to protecting what's left of Prince of Wales Island, while providing for a sustainable economy for the area's future.

POWCL submits the following comments in accordance with the Supplemental Draft Environmental Impact Statement (SDEIS) for the Control Lake Project Area. We urge you to consider these comments in developing the Final Environmental Impact Statement (FEIS) for the Control Lake Project Area. We request that these comments be addressed within the framework of collaborative stewardship for the long term sustainability of all forest resources and economically effected local communities.

It was the vision of the Citizens' Coalition to develop a timber sale predominately for small independent operators, a sale designed to facilitate the transition from a volume based to a value-added industry. The Control Lake Project Area offers the perfect opportunity for smaller timber sales due to its geographic location and existing road system. The Citizens' Alternative also offers a long term perspective for management of all forest resources.

PWCL-1

According to the SDEIS, Alternative 10 as initially designed, proposed harvesting 1,281 acres out of a 9,409 acre, 250 initial unit pool, or 13.6% of the available commercial timber base. The 1997 TLMP Revision reduces available

commercial timber base in the Project Area to a 4,510 acre, 123 unit pool. This reduction of commercial timber base means the proposed Alternative 10 harvest will increase to 28% of available commercial timber base during the 1998-2002 project period. POWCL is concerned by this increase of harvest. We continue our support of the Citizens' Alternative, but acknowledge that revision might be necessary for Alternative 10 to meet existing Standards and Guidelines under the 1997 TLMP.

PWCL-1

Alternative 11 proposes harvesting 3,612 acres or fully 80% of the currently available commercial timber base in this implementation period! To even suggest harvesting 80% of the available timber base in a single project area in a single implementation period is not only unreasonable, it is unconscionable! Leaving only 20% of the commercial forest land for future timber harvest is clearly a continuation of the old volume based industry. It is short sided and not in the best interest of sustaining local economies or forest resources.

PWCL-2

POWCL is disappointed the Forest Service has missed the mark. The Forest Service does not offer enough small sales in Alternative 10, and from the data presented it is difficult to determine sale size. "Preliminary implementation planning indicates that Alternative 10 would be sold in 11 sales ranging in size from 0.2 to 5.5 MMBF." (SDEIS 2-17). From this information we know that one sale will be 0.2 MBF and a second sale will be 5.5 MMBF. What size are the other nine proposed sales? When would these 9 sales be offered? What units would make up a sale? A table that specifies sale size and sale year and unit for Alternative 10 would be helpful. Such a table is not provided. This makes it difficult to compare alternatives and suggests the Forest Service did not analyze Alternative 10 to the same extent as the preferred alternative.

PWCL-3

It is difficult to determine sale size and year offered for Alternative 11 by studying Table 2, Appendix A, SDEIS. Data on individual units offered in a particular sale is not available. The table below presents the information in a different format to facilitate comparison of sale size vs. year offered.

Fiscal Year	# of Sales	Volume Range (MMBF)	Volume (MMBF)	# Sales < 1 MMBF
FY 98	11	0.2 - 13.2	41.1	4
FY 99	5	1.8 - 10.0	28.4	0
FY 00	1	12.0	12.0	0
FY 01	0	0	0	0
FY 02	1	9.6	9.6	0
Totals	18		91.1	4

Table 1, Alt. 11 Timber Sales by FY and Volume

From Table 1 in this document, we see 18 sales totaling 91.1 MMBF are to be offered over the 1998 - 2002 implementation period. This is inconsistent with text in the SDEIS which "proposes to harvest an estimated 94 million board feet (MMBF)." (Summary at page iv). "Preliminary implementation planning indicates that Alternative 11 would be sold in 17 sales ranging in size from 0.2 to 13.1 MMBF." (SDEIS, 2-17). In addition it is easy to see only 4 sales less than 1 MMBF are offered during the entire project period. Alternative 11 falls far short of providing a range of smaller volume sales for local independent operators. In addition, it is "front loaded". The 4 sales less than 1 MMBF are offered in the first year. Please explain how this distribution of natural timber resource will help the local economy over the long term.

PWCL - 3

Independent operators on POW require smaller volume sales. These sales should range from 1 tree to less than 1 MMBF and should include green tree sales. These sales must be based on sound economics. The Forest Service should increase the offerings between 50 - 100 MBF to the extent economically practical. If the emphasis is placed on smaller volume sales the free market economy will develop value-added products. More jobs per MMBF should be the USFS goal, not more MMBF per sale.

Alternative 11 is inconsistent with the goals and objectives identified by the Tongass Land and Resource Management Plan (TLMP, 1997). Alternative 11 is fundamentally flawed with the stated Purpose and Need for the Control Lake Timber Sale: 1) "improve timber growth and productivity for a long-term sustained yield of timber." How does cutting 80% of available timber in a single project area in a single implementation period contribute to long-term sustained yield of timber? 2) "contribute to a timber supply from the Tongass that seeks to meet annual and TLMP planning cycle market demand." Seeking to meet market demand from this sale area violates 1997 TLMP which attempts to embrace resources-sustainability. 3) "Provide opportunities for local employment and allowing a variety of successional stages within the Project Area" (SDEIS Summary, iv). Cutting 80% of available timber in a single project area in a single implementation period does not allow for a variety of successional stages within the Project Area!

PWCL - 4

Pacific Northwest Research Station economists David Brooks and Richard Haynes analysis for the 1998-2002 planning period predict a medium volume scenario of 135 MMBF off the entire Tongass Forest. See Table M-4, Volume 4, Appendix to the 1997 Forest Plan Revision, FEIS. No apparent markets exist right now that would require the harvest of 94 MMBF of timber from a single project area in a single (5 year) planning period.

PWCL - 5

Alternative 11 fails to address the cumulative effects of past logging on adjacent private land. VCU's 593, 594 and 595 contain close to 30 units near heavily clear-cut Native land. By contrast Alternative 10 contains only 7 units near previously clear-cut private land. Alternative 10 attempts to mitigate the cumulative impacts of massive clear cutting under the LPK 50 year contract and extensive harvest of private lands.

PWCL - 6

POWCL supports eliminating log export off the National Forest of any volume or any species. Stop exporting public resource timber and the free market economy will provide the local market. Exporting raw timber exports jobs. It's that simple.

PWCL - 7

Local communities have become addicted to unsustainable, unpredictable, and unreliable National Forest Receipt payments from a volume based timber economy. Communities cannot plan year to year in this type of economy. "Value-added manufacturing would add jobs to the local community Also, value-added manufacturing could provide local use, rather than export of sawmill residue and low-grade logs." (1997 TLMP, page M-6). Communities on POW have long sought a more stable year-round economy. Now that the two pulp mills are no longer operating and their 50 year contracts are gone, the transition from volume to value-added timber industry can become a reality. A value-added timber industry would go a long way to achieving economic stability for communities on the Tongass. The Forest Service can and must help in this transition. Offering lower volume sales to small operators can only help promote a timber industry with more jobs per MMBF. Smaller operators pay more for timber in a free market economy. Dollar return to the local communities would become more consistent and stable over time. Not only would you have more jobs per MMBF, you will see a greater return from public timber.

PWCL - 8

The new Forest Plan provides additional protection for Honker Divide. Unfortunately it does not go far enough. For 30 years ADF&G, local people, local and national conservation groups have been telling the USFS to stay out (completely out) of Honker Divide. It's long past time to listen to these voices. POWCL requests the Forest Service eliminate all further logging in Honker Divide from ridge top to ridge top. We request all units in VCU 575 be removed from the timber base. We support extending the Honker HCA ridge top to ridge top. POWCL also calls for the removal and reforestation of the 3016 road.

PWCL - 9

Alternative 10 does the best job of protecting fish and wildlife. It stays completely out of Elevenmile and Honker Divide protecting critical habitat for marten, black bear, Sitka black-tailed deer and Alexander Archipelago wolf.

PWCL - 10

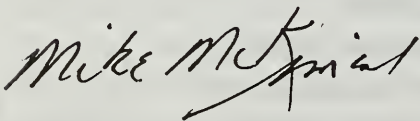
The time for the timber industry to transition from large scale industrial logging to a smaller scale value-added industry is long overdue. The lessons learned from the Pacific Northwest and British Columbia should not be ignored. The location of this project area is ideal for small operators and ideal for transition from a volume to value-added timber industry. It is time for the USFS to encourage and fully participate in this transition. The Forest Plan has the flexibility to make this happen. The time is now. This is the sale. Give small operators and the free market economy a chance.

PWCL -11

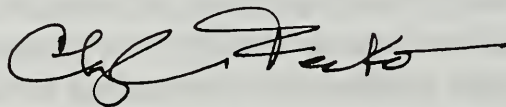
POWCL disagrees with the statement "Alternative 11 in the Supplemental DEIS represents a collaborative effort to identify where best to harvest timber in balance with other uses and resource needs in the Project Area." (December 19, 1997 Cover Letter SDEIS). We believe Alternative 10 is a true representation of a collaborative local effort and should be the preferred alternative for management of all forest resources including fish, wildlife, subsistence and timber.

POWCL requests the adoption of Alternative 10, with amendments necessary to meet the new Forest Plan Standards and Guidelines, as the preferred alternative for the Control Lake Timber Sale.

Respectfully Submitted,



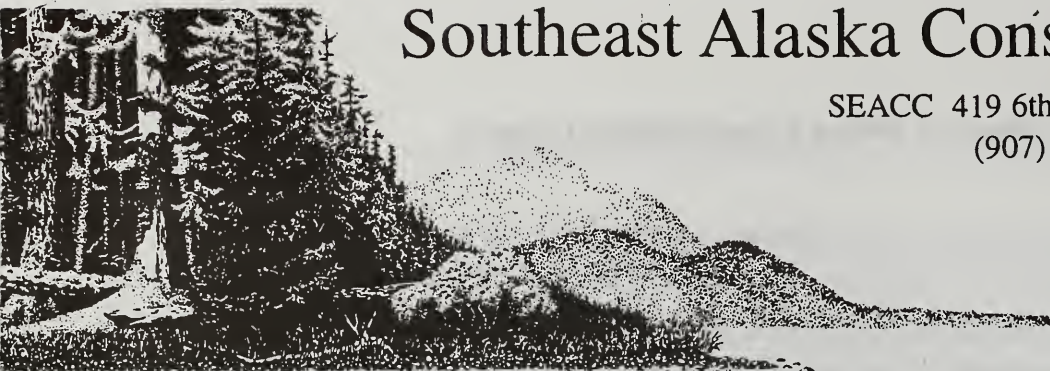
Mike McKimens, Chairperson



Cheryl Fecko, Chairperson

Responses to Prince of Wales Conservation League

- PWCL-1** The commercial timber base for the Control Lake Project Area is approximately 25,600 with about 22,700 available at this time. Note the changes in acres and volumes for each alternative in the Final EIS. Your support of Alternative 10 is noted.
- PWCL-2** In reference to the response to PWCL-1, the 3,612 acres you refer to would represent about 16 percent of the available commercial timber base, not 80 percent.
- PWCL-3** Appendix 2 of the Record of Decision lists potential sales for the Selected Alternative.
- PWCL-4** See response to PWCL-1 and 2.
- PWCL-5** As noted in Appendix A of the Final EIS, the Brooks and Haynes study did not include changes in the industry such as upgrading of the mill in Klawock, opening of the new mill on Gravina Island, adding a veneer plant at Ward Cove, re-opening of the Wrangel sawmill, et al. Indications are that there is a need for timber from the Tongass National Forest.
- PWCL-6** The Control Lake EIS has accounted for activities on adjacent private lands and previous activities within the Project Area. Some examples include the landscape zoning concepts that were used early in the project, the habitat capability models used during project analysis, cumulative activities in watershed and visuals, etc.
- PWCL-7** Your comments regarding log exports are noted.
- PWCL-8** Your comments regarding the transition of the timber industry in Southeast Alaska is noted. See the response to SEAC-1 related to smaller timber sales provided on Prince of Wales Island.
- PWCL-9** The Selected Alternative does not include any units in VCU 575. Road 3016 will be closed with a gate. The future of this road will be analyzed through the Thorne Bay District access management program.
- PWCL-10** Your comment regarding Alternative 10 is noted.
- PWCL-11** Your support for Alternative 10 is noted. The concepts in Alternative 10 were important in the development of the Selected Alternative.



Southeast Alaska Conservation Council

SEACC 419 6th Street, Suite 328, Juneau, AK 99801
(907) 586-6942 phone (907) 463-3312 fax
info@seacc.org

March 16, 1998

Brad Powell Forest Supervisor
Tongass National Forest, Ketchikan Area
Attn: Control Lake SDEIS
Federal Building
Ketchikan, AK 99901

Dear Mr. Powell:

Thank you for providing the opportunity to comment on the Control Lake Timber Sale Supplemental Draft Environmental Impact Statement (SDEIS). The following comments are submitted by the Southeast Alaska Conservation Council, a coalition of 15 volunteer citizen organizations located in 12 communities throughout Southeast Alaska. SEACC's members include commercial and sport fishermen, Alaska Natives, small-scale independent timber operators and value-added wood manufacturers, sport hunters and professional guides, subsistence users, tourism and recreation business owners and Alaskans from many other walks of life.

SEACC is dedicated to preserving the integrity of Southeast Alaska's unsurpassed natural environment while providing for the balanced, sustainable, use of our region's resources. Southeast Alaska contains magnificent old-growth forests, outstanding fish and wildlife habitat, vital customary and traditional use or subsistence areas, excellent air quality and a landscape that allows Alaskans to live a lifestyle no longer available to most Americans.

I. THE FOREST SERVICE IS SQUANDERING THE OPPORTUNITY TO USE THIS SUPPLEMENTAL PLANNING PROCESS TO FACILITATE A TRANSITION TO A NEW TONGASS TIMBER INDUSTRY.

The end of the comment period falls eight days before the one year anniversary of the closure of the Ketchikan Pulp Company's pulp mill. The mill's closure and the negotiated contract termination, not "modification," as the Forest Service asserts (SDEIS at 2-2) of KPC's long-term timber sale contract, marked the end of the "old" Tongass timber program. While SEACC concedes change cannot occur overnight, we are extremely disappointed that the Forest Service has done very little use this planning process to facilitate transition to a new Tongass timber industry based on local small-scale high value-added wood products manufacturing.

SEACC
- 1

90

A. Alternative 10 - The Citizens' Alternative

The new Tongass timber industry should be tailored to smaller-scale, Southeast Alaskan based businesses that target domestic and other niche markets that will pay premium price for semi-finished and finished old growth forest products; products manufactured here in Alaska, not Asia or Washington State. Not only does this approach provide more jobs and revenue at lower logging levels, but it also minimizes forest resource conflicts and promotes long-term economic stability for local economies.

SEAC
-1

In an attempt to help make this "value-added" approach a reality, SEACC worked closely with a diverse group of Prince of Wales Island and Ketchikan residents in the creation of a citizens' alternative for the Control Lake timber sale. The citizen's alternative represents an extraordinary investment of time and energy by concerned residents and the Forest Service rightly moved it up from an appendix in the 1995 DEIS and included it in the range of action alternatives evaluated in the SDEIS.

SEACC further requests that the Forest Service break Alternative 10 down into offerings scaled for Prince of Wales Island operators, as requested by the Prince of Wales Conservation League and Control Lake Citizens' Coalition (CLCC). CLCC has offered concrete suggestions of how the Forest Service can utilize the cutting units proposed in Alternative 10 to provide timber to small-scale, independent operators; we support these suggestions.

This collaborative effort, unprecedented in Southeast Alaska, represents a constructive alternative to traditional Forest Service timber sale planning. Several issues took center stage during the formulation of the citizens' alternative, including:

- *Sustaining timber resources over the long-term;
- *Incorporating the recommendations of scientific experts to help preserve healthy, huntable populations of deer and long-term viability of Prince of Wales Island's population of Alexander Archipelago wolves;
- *Providing opportunities for smaller sized, Prince of Wales Island based timber operators;
- *Good economics and providing a positive overall economic return to the treasury;
- *Ridgetop to ridgetop protection for the Honker Divide;
- *Recognizing the important customary and traditional values of the Elevenmile Peninsula and by proposing no logging or roadbuilding in this valuable subsistence areas subsistence hunting, fishing and gathering opportunities;
- *Designing a timber sale program that invests in people, sustainable jobs and the long-term health of our forest.

It's fair to say that the Control Lake Citizens' Alternative was ahead of the times. Although the concept of "collaborative stewardship" was not presented to the public until the release of the Revised TLMP last May, the Citizens' Coalition was already putting collaborative stewardship principles into practice.

SEAC
- 1

According to the Revised TLMP:

"Collaborative stewardship means bringing people together to share in the decision making in implementing forest plan direction. The Forest Plan land use allocations and direction have some flexibility. Interaction among interested people within the communities can lead to mutually acceptable resolution of resource use issues. I am hopeful that such interaction and participation will lead to more local influence, better knowledge of forest activity, and fewer cases of appeals and litigation."

This is precisely the intent of the citizens' alternative. SEACC fully supports the citizens' alternative.

B. Failure to Apply All the Revised TLMP's Management Direction and Standards and Guidelines to This Sale is Unlawful.

The National Forest Management Act (NFMA) directs that all "[r]esource plans and permits, contracts and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans." 16 U.S.C. § 1604(I). Those plans, permits and contracts "currently in existence shall be revised as soon as practicable." *Id.*; 36 C.F.R. § 219.10(e).

SEAC
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The SDEIS, however, relies on direction in the ROD for the Revised TLMP that identifies the Control Lake timber sale as a Category 3 project. According to the ROD, some of the new standards and guidelines for wildlife, "which address landscape connectivity, endemic terrestrial mammals, northern goshawk, and American marten," will be implemented to the extent determined through review by an interagency implementation team. *See* TLMP ROD at 41. We support interagency coordination and participation in implementing TLMP. However, the Forest Service lacks the discretion to exempt particular projects from specific standards and guidelines adopted in a new or revised forest plan, whether done in consultation with other agencies or not.

The SDEIS claims that new wildlife measures were incorporated into the Control Lake project "was determined through review by an interagency implementation team...." SDEIS at 2-3. However, the SDEIS fails to disclose what specific measures were adopted, or if not, why not. For example, although the SDEIS states a conclusion regarding the effect of applying the new standards and guidelines for marten, the SDEIS does not identify how these standards and guidelines were applied at the unit-level. This omission violates NEPA because it prevents the Forest Service from demonstrating its compliance with the Revised TLMP.

The importance of applying all the Revised TLMP's standards and guidelines to this project is heightened given the numerous appeals filed on the revised forest plan. See SEACC's Appeal of the Revised TLMP, No. 97-13-00-0101 (Sept. 25, 1997).¹ One of the issues raised in SEACC's appeal, and others, was the adequacy of the forest-wide reserve system and standards and guidelines adopted to safeguard wildlife habitat and populations. In light of the sweeping goals and policies of NEPA, this supplemental planning process should provided the Chief of the Forest Service with a project-level assessment of the effects from applying the Revised TLMP's wildlife habitat conservation strategy. The failure to take a hard look at the effect of all the new standards and guidelines on the Control Lake project prevents the Chief from using information and analysis from this planning process when evaluating these critical appeal issues.

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Furthermore, the Forest Service has failed to show that updating the Control Lake project to comply with all management requirements of the Revised TLMP is not "practicable." First, the Forest Service had at least 6 months between adoption of the Revised TLMP and release of the SDEIS. In addition, the SDEIS reveals that there is a substantial backlog of unlogged timber under contract. See SDEIS at 1-5. Consequently, given the level of impact to Prince of Wales Island ecosystem from past and current logging and roading on both national forest and private lands, the Forest Service lacks a reasonable basis for accepting the risk to wildlife, and associated commercial, recreational, and subsistence uses of wildlife, from not fully implementing new management standards is "practicable," or concluding the proposal complies with NFMA and the Tongass Timber Reform Act (TTRA).

Another factor, which could reduce the effectiveness of the Revised TLMP's forest-wide reserved system, is the selection of national forest lands by cities, the State, village and Regional native corporations.² Our review of a map prepared by the Forest Service showing the location of these selections strongly suggest an alarmingly high correlation with lands allocated to Old Growth or other natural setting LUDs in the Revised TLMP. The location of these selections were never disclosed during the TLMP process, and some are apparently within, or directly adjacent to the Control Lake Project Area. The existence of these selections call into question the adequacy of the Revised TLMP's old-growth reserve strategy. Consequently, this SDEIS should have identified the location of the potential selections and evaluated the effects to the environment if conveyance of the selections occurred. Its failure to do so is a violation of NEPA. Given the existence of these selections, we strongly recommend the Forest Service evaluate the need to expand existing old-growth blocks, like the Rio Roberts watershed, to mitigate impacts from the potential selections. At a minimum, the Forest Service should preserve options for expanding old-growth areas in VCU's 591, 593, 596, 574 and 575.

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¹ A copy of this appeal is attached to these comments for incorporation into the planning record for this timber sale project. We further note that two of our 15 member groups, which are comprised of residents who live in communities on Prince of Wales Island, filed administrative appeals of the Revised TLMP. See Nos. 97-13-00-0088 & 0113.

² See Letter from Briggs, Craig City Administrator to Silver, Robertson, Monagle and Eastaugh (Jan. 13, 1998)(attached); see also Memo from Brockmann to Holmberg, USFWS Field Supervisor (Jan. 9, 1998)(attached); Memo from Brockmann to Holmberg, USFWS Field Supervisor (Feb. 2, 1998) (attached).

The SDEIS further suggests that "new analyses were conducted to reflect new ... standards and guidelines, and projections made by the new TLMP (1997). SDEIS at 2-2. **However, a review of the SDEIS shows several conspicuous examples of the Forest Service failure to update this project in conformance with the requirements of the Revised TLMP.** The failure to apply new standards and guidelines applicable to Class III RMA, and to avoid disturbance of Kaikli, Karheen, Kitkun, and Maybeso soil series, is indicative of the sloppy and unlawful planning represented by the SDEIS. Although we fully support the Citizens Alternative, we recognize the Forest Service failed to conduct the analysis and apply the standards and guidelines required by the Revised TLMP. This failure violates NFMA, as well as "NEPA's disclosure goals, i.e., to insure the agency has fully contemplated the environmental effects of its action and to insure the public has sufficient information to challenge the agency." Idaho Sporting Congress v. Thomas, No. 97-35339, slip op. at 1814 (9th Cir. Mar. 4, 1998)(citations omitted).

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The Forest Service's attention is directed to the statement in the Citizens' Alternative which recognizes that this collaborative effort is a "draft that may be refined through public comment and consultation with the U.S. Forest Service, other public agencies and interested parties." The shoddy SDEIS, however, fails to provide the public or decision maker with the high quality information necessary for the Citizens' Coalition to evaluate what changes are required to assure the Citizens' Alternative consistency with the Revised TLMP. While we recognize the need to modify the Citizens' Alternative to comport with the requirements of the Revised TLMP, the incomplete analysis presented in the SDEIS prevents us from doing so. For example, while the SDEIS notes that one of the units from the Citizens' Alternative is inconsistent with TLMP's visual prescription for the West Coast Waterway Viewshed, it doesn't explain what options are available to modify the unit to achieve consistency. While the Citizens' Coalition has identified some potential substitute units in the project area, the inadequate level of analysis in the SDEIS prevents the Coalition, or the decision maker, from evaluating whether those substitute cutting units, as designed, are consistent with the Revised TLMP.

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II. THE PURPOSE AND NEED STATEMENT IN THE CONTROL LAKE SDEIS MISCONSTRUES THE BROAD AND PERMISSIVE NATURE OF THE REVISED TLMP.

A. Manipulating the Broad Goals and Objectives in TLMP to Achieve a Preconceived Outcome Violates NFMA.

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According to the SDEIS , Ch. 1, p. 4, the purpose and need for the Control Lake Project is, "... to respond to the goals and objectives identified by the Tongass Land and Resources Management Plan (TLMP 1997) for the Project Area and to move the Project Area towards the desired future conditions described in the TLMP." The Forest Service characterization of the "desired future conditions" for this project area, however, is inconsistent with the broad, permissive direction of the Revised TLMP. The Forest Service identified 18 "Forest-wide multiple use goals and objectives" in the Revised TLMP. According to TLMP, at 2-2, these "... goals are expressed in broad, general terms and specify no date by which they are to be accomplished."

Contrary to the broad direction of TLMP, the SDEIS' Purpose and Need statement cites only TLMP goals and objectives that justify logging 94 mmbf from the project area. Instead of defining the purpose and need for this project broadly to accomplish the forest-wide multiple-use goals and objectives of the plan for this area, the agency improperly focused on those goals and objectives consistent with its specific proposed action -- logging 94 million board feet (mmbf) of timber and constructing or reconstructing about 78 miles of road. The Forest Service cannot simply pick and choose which goals and objectives to adhere to.

The planners did not attempt to restrict the range of alternatives by identifying a specific timber target as this project's "purpose and need." However, defining the "purpose and need" by preferring only those forest multiple-use goals and objectives consistent with the agency's "proposed action," prevented the Forest Service from "... rigorously explor[ing] and objectively evaluat[ing] all reasonable alternatives," particularly the no-action alternative. See 40 C.F.R. 1502.14. Defining the proposed action, which is also the preferred alternative, as consistent with the "desired future condition" for this project area ignores the permissive nature of the Revised TLMP, and is also inconsistent with the fundamental principles of adaptive ecosystem management and collaborative stewardship that form the bedrock for the Revised TLMP. This violates NFMA.

According to the 1997 Tongass Land Management Plan, (ch. 2 p.3,) "Forest plan goals are responsive to identified public issues and resource use opportunities and collectively describe the desired conditions sought to be attained in the long run." A review of the 18 goals and objectives outlined by the Forest Service indicates that Alternative 10, the Citizens' Alternative, does the best, most comprehensive job of moving the project area towards the desired future condition, while using an ecosystem management approach. TLMP states that, "Taken and considered together, goals represent management from an "ecosystem" perspective, where ecosystems are considered from the "site" to the "Forest" level." In the Revised TLMP (at 7-10), the agency defines "ecosystem" as: "A complete interacting system of organisms considered together with their environment;" and the term "ecosystem management" as, "The use of an ecological approach to land management to sustain diverse, healthy, and productive ecosystems." **Of the three (3) action alternatives considered in the SDEIS, the Citizens' Alternative does the best job of following these principles as defined by the Forest Service.**

Unlike the agency, which only identified three of TLMP's goals and objectives in their Purpose and Need statement, the members of the Citizens' Coalition who created alternative 10, "laid all the cards on the table," before they decided where and where not to log in the project area. In stark contrast to the Forest Service, the creators of the citizens' alternative identified areas and issues of concern, their "goals and objectives," and then worked a timber target around them.³ The Forest Service on the other hand, came up with its "proposed action" and "preferred alternative" the same way it always has -- by setting a timber target and then attempting to make it fit, regardless of taxpayer expense, environmental harm, or legality.

³ See The Elevenmile and Honker Divide Citizens' Alternative, as presented by the Prince of Wales Citizens' Coalition (1995)(attached). Although the specifics of the alternative have changed since 1995, the members of the Coalition continue to stand by the principles which formed the basis for the alternative.

B. The SDEIS Demonstrates That the Citizens' Alternative Provides the Maximum Benefits To Communities on Prince of Wales Island.

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According to the Forest Service's own analysis, the Citizens' Alternative would pose the least amount of risk to all project area resources. **Clearly, if the Forest Service is to manage the project area for the maximum benefit of a variety of user groups, it must select the Citizens' Alternative as its selected alternative.** The following is a list of excerpts from the SDEIS demonstrating this fact:

Subsistence - "After the Control Lake Project timber harvests are completed, estimated habitat capabilities would be lower with the largest decrease associated with Alternative 12 and the smallest decrease tied to Alternative 10. SDEIS at 4-140

Fish Habitat and Water Quality - "Generally, Alternative 12 has the highest risk individually for Class I, II, and III streams, while Alternatives 11 and 10 have progressively less risk for each stream class. A combined ranking of alternatives, including risk of effects to anadromous fish streams, resident fish streams, and water quality shows that Alternative 12 has a higher risk than the other three alternatives, followed by Alternative 11, and then 10." Id. at 4-43,45

Wildlife - "Implementation of Alternative 10 would have the least effect on habitat capability, with most species remaining within one percent of existing conditions." Id. at 4-78

Recreation - "Alternative 10 would convert the least amount of P and SPNM of any of the alternatives." Id. at 4-176

Economics - Alternative 10 has the highest PNV of all alternatives - \$2.9 million compared to \$2.77 million for Alternative 11 and \$2.85 million for Alternative 12. Alternative 10 also has the highest PNV per acre disturbed - \$2,261 PNV/acre compared to \$767/acre for Alternative 11 and \$639/acre for Alternative 12. Id. at 4-128

LTFs - Alternative 10 would only use 2 LTFs, compared to 4 LTFs used under Alternatives 11 and 12. Id. Table 4-53 at 4-121.

Roads - Alternative 10 constructs the least amount of roads (30 miles, compared to 78 and 98 for Alternatives 11 and 12, respectively). Id. at 4-117

Road Costs - Alternative 10 has the lowest road construction costs (\$3.8 million compared to \$14 million and \$17.5 million for Alternatives 11 and 12, respectively) Alternative 10 also has the lowest road costs per mbf logged - \$101/mbf compared to \$150 and \$154 for Alternatives 11 and 10, respectively. Id. at 4-118

Visual Effects - Alternative 10 would have the least impact on visual resources, with only 10 units within Viewshed Boundaries, compared to 29 and 33 for Alternatives 11 and 12, respectively." Id. at 4-170

Roadless Areas - "Alternative 10 would leave the most roadless area of the three action alternatives, approximately 122,065 acres." Id. at 4-186

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Soil Disturbance Due to Logging - "Alternative 12 has the most acres disturbed while Alternative 10 has the least." Id. at 4-14

Road Construction Disturbance - "Alternative 12 has the highest acreage of road-associated disturbance followed by Alternatives 11 and 10, in that order." Id. at 4-12

High Hazard Soils - Alternative 10 has the least amount of logging on High MMI soils - 637 acres, compared to 1,429 and 1,655 acres for Alternatives 11 and 12, respectively. Id. Table 4-4 at 4-14

Wetlands - "Alternative 12 has the most calculated muskeg inclusions followed by Alternatives 11 and 10, in that order." Id. at 4-19

- "Forested wetlands range from 597 acres for Alternative 10 to 1,821 acres for Alternative 12." Id.

- "Of the 13 units identified as most likely to contain inclusions of protected soils, none are included in Alternative 10, 8 are included in Alternative 11, and all 13 are included in Alternative 12." Id. at 4-21

Floodplains - "Road crossings of Class I floodplains range from 39 for Alternative 12 to 10 for Alternative 10." Id. at 4-23

Riparian Management Areas - "Alternative 12 has largest number of acres within the Riparian Management Area, followed by Alternatives 11 and 10, in that order." Id. at 4-23

Sediment Risk Due to Logging - "Alternative 12 has the highest potential, while Alternative 10 has the lowest potential for sediment effects." Id. at 4-33

Sediment Risk Due to Roads - "Alternative 10 has the fewest total stream crossings." 4-34. "Alternative 12 has the highest potential for sediment delivery [from roads] to streams, followed by Alternatives 11 and 10, in that order." Id. at 4-35

Headwater Streams - "Vegetation removal along Class III/IV streams ranges from 48.5 miles for Alternative 12 to 24.9 miles for Alternative 10." 4-37. "Alternative 12 has the most harvest of Class III stream length followed by Alternatives 11 and 10." Id. at 4-41

Old-Growth Patches - "Overall, Alternative 10 results in the lowest fragmentation of large forest patches, and Alternative 12 results in the highest." Id. at 4-107. Alternative 10 "ranks highest among the action alternatives for all species," in terms of patch-size effectiveness. Id.

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Karst - "Alternative 10 would not intersect any karst lands." Id. at 4-7,8

C. The Forest Service Violates NEPA By Using the "Desired Future Condition" to Restrict the Range of Alternatives.

Consideration of alternatives is the "the heart of the environmental impact statement" Alaska Wilderness Recreation and Tourism Association v. Morrison, 67 F.3d 723, 729 (9th Cir. 1995) ("AWRTA") These alternatives must include no-action: "informed and meaningful consideration of alternatives - including the no-action alternative - is thus an integral part of the statutory theme." Bob Marshall Alliance v. Hodel, 852 F. 2d 1223, 1228 (9th Cir. 1988) cert. denied, 489 U.S. 1066 (1989) (emphasis added).

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The Forest Service never actually compares the benefits of selecting the "no action" alternative. Instead, the Forest Service relies on "the proposed desired future condition for each LUD as described in the Forest Plan Revision," see e.g., SDEIS at 4-71, to justify a lack of meaningful consideration of the no-action alternative. Certainly, neither Section 101 of the TTRA nor the Revised TLMP compel selection of an "action" alternative. See AWRTA, 67 F.3d at 730-31 (TTRA gives the Forest Service flexibility among multiple uses); City of Tenakee Springs v. Block, 778 F.2d 1402, 1406 (9th Cir. 1985)(Tongass Plan permissive only); Revised TLMP, App. L at L-150 ("The Forest Plan does not make site-specific decisions..."). Moreover, if the Revised TLMP is truly permissive and did not make site-specific decisions, then the desired future condition proposed in the TLMP is not an inflexible standard or preordained result used to define the proposed action at the project-level, but the product of that public planning process.

By stating in the purpose and need section that logging in the Control Lake Project Area is necessary to reach "desired future conditions," the Forest Service is not allowing for meaningful consideration of the no action alternative, therefore artificially restricting the range of alternatives. This violates NEPA, which says: "Agencies shall not commit resources prejudicing selection of alternatives before making a final decision." 40 C.F.R. §1502.2(f).

Without exception, supra, the Citizens' Alternative is the most protective of renewable forest resources in the SDEIS among the action alternatives. However, by only evaluating the direct, indirect and cumulative impacts of the Citizens' Alternative with the two other "action alternatives," the SDEIS improperly substitutes the Citizens' Alternative as a baseline for measuring acceptable levels of impacts, instead of the no-action alternative. This could allow the Forest Supervisor to claim that he is being responsive to public comment and mitigating harm by simply proposing a "selected" alternative that falls somewhere between the proposed action and the Citizen's Alternative.

D. The Forest Service Must Eliminate the 94 mmbf Timber Target.

Table 2 of Appendix A to the SDEIS reveals that the Forest Service has already scheduled over 41 mmbf of timber from the Control Lake project area for FY 98 -- approximately 3 mmbf more than the entire cut called for in the Citizens' Alternative. Another 28 mmbf is scheduled for sale in FY 99. Finally, the Forest Service says it will schedule an additional 12 mmbf from the Control Lake Project area in FY 2000 and 9.6 mmbf in FY 02. According to the Forest Service's own published schedule, the agency plans to sell 91 mmbf of timber- nearly the same amount called for under the preferred alternative.

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This table is enough to make a member of the public wonder if any alternative, other than the Forest Service's preferred alternative, is receiving meaningful consideration. Despite inclusion of the citizens' alternative as one of the action alternatives, and dropping a volume-specific Purpose and Need for the project, SEACC is concerned that the Forest Service is continuing to violate NEPA by pre-establishing the outcome of the Control Lake Project planning process. See 40 C.F.R. § 1502.2(g).

III. SELECTION OF THE PREFERRED ALTERNATIVE WILL VIOLATE THE TTRA BECAUSE IT WILL OFFER TIMBER FAR IN EXCESS OF LIKELY MARKET DEMAND.

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A. The DEIS Misrepresents the Brooks and Haynes Report, Violating NEPA.

In its discussion of market demand for Tongass timber, the Forest Service continues to misrepresent the findings of its own economists. Referring to a credible in-house report performed by Forest Service economists,⁴ the SDEIS erroneously states that "Projected annual sawlog demand for the next decade is 113 million board feet (mmbf) for the low scenario, 133 mmbf for the medium, and 156 mmbf for the high scenario." DEIS at 1-4 (emphasis added). For all scenarios, however, the Brooks and Haynes report calculated total market demand: "[t]hese figures refer to total National Forest Harvest, including both net sawlog and utility volume." Brooks and Haynes at 3 (emphasis added). Furthermore, Brooks and Haynes estimated annual market demand for Tongass timber over five-year intervals, not over decadal periods. For the period from 1998-2002, when all of the timber from the Control Lake project is scheduled to be sold, the economists estimated market demand for Tongass timber to be 96 mmbf under the low scenario, 113 mmbf under the medium scenario, and 130 mmbf under the high scenario. Id. at 6. The Forest Service has a duty to insure that information and analysis presented in the DEIS is accurate and of high quality. This misrepresentation of the Brooks and Haynes study therefore violates NEPA. See 40 C.F.R. § 1500.1(b)

⁴ See D. Brooks and R. Haynes, Timber Products Output and Timber Harvests in Alaska: Projections for 1997-2010 (September 1997).

B. The DEIS Proposes Logging in Excess of Market Demand, in Violation of TTRA.

Section 101 of the Tongass Timber Reform Act states:

Subject to appropriations, NFMA, other applicable law, and the requirements of the National Forest Management Act ... the Secretary shall, to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest, and (2) meets the market demand from such forest for each planning cycle.

16 U.S.C. 539d(a). The Ninth Circuit has explained this provision as follows: "TTRA envisions not an inflexible harvest level, but a balancing of the market, law, and other uses, including preservation." AWRTA, 67 F.3d 723, 731 (9th Cir. 1995). As stated above, expected annual market demand for the years 1998-2002 ranges from 96 mmbf to 130 mmbf. During this same time period, precisely when the Forest Service plans to offer timber from the Control Lake project, however, the Forest Service plans to offer an average of 225 mmbf per year, about double the median expected demand for Tongass Timber. See DEIS at A-12. As part of the total Tongass timber sale program, the Control Lake Project contributes timber in excess of market demand. At the same time, the SDEIS admits that the timber sale will have significant effects on subsistence uses, in violation of Title VIII of ANILCA. Therefore, since the proposed sale fails to provide for healthy populations of deer from the project area for subsistence and sport uses and provides timber far in excess of market demand, the Forest Service is violating TTRA.

C. The Argument to Supply a 3-year Supply of Timber Lacks a Reasonable Basis and Violates Section 101 of TTRA.

On page 1-5, the SDEIS states:

"The Forest Service intent is to provide the opportunity for the timber industry as a whole to acquire a supply of purchased, but yet unharvested timber equal to about three years of timber consumption."

After passage of the TTRA, the Forest Service concluded that "it [was] desirable to have 2 ½ to 3 years of timber available for harvest at the beginning of each fiscal year...to remove uncertainty from the National Forest timber supply in Southeast Alaska." See letter from Deputy Chief Leonard to Sen. Stevens (April 23, 1991)(attached). This was a policy decision reached outside the public process, and prompted by Senator Stevens' request. See letter from Sen. Stevens to Deputy Chief Leonard (April 16, 1991) (attached). This policy has no legal basis and contemplated a long-term contract driven timber program, which is vastly different than the one we have today. Moreover, this "intent" or "policy" is contradicted by statements from the timber industry itself. Seven months prior to the above correspondence, statements from timber industry

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representatives show that the industry did not need a 3-year supply of timber. In a letter to the Ketchikan Area Supervisor, Ketchikan Pulp Company's Timber Division Manager stated that KPC "realistically need[ed] to maintain a minimum of 12 months of timber released ahead for road construction and six months of timber roaded ahead for logging." See Letter from Graham to Forest Supervisor Lunn (Sept. 21, 1990)(attached).

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By striving to provide a 3-year timber supply to the timber industry, the Forest Service is providing timber far in excess of market demand and therefore violates Section 101 of the TTRA. Furthermore, it is apparent that the Forest Service has already supplied the timber industry with a more than a 3-year supply of timber. Considering the 300 mmbf allocated to KPC with the 204 mmbf currently under contract to independent operators, the Forest Service has already supplied the timber industry with five times the estimated annual demand for Tongass timber. SDEIS 1-5.

When Brooks and Haynes calculated projected annual demand for Tongass timber, they did not distinguish timber processed by KPC under the 3-year agreement with the federal government. The Brooks and Haynes study was developed by using a trend-based analysis "in which the outlook for consumption underlies projections of forest products production and timber harvests in Alaska." Brooks and Haynes 2. Using such a macro-economic approach, there is no way to separate KPC's production from that of other wood products manufacturers in the region. By considering KPC's timber supply separately from the independent program, the DEIS therefore misinterprets the Brooks and Haynes study, in violation of NEPA. See 40 C.F.R. § 1502.24.

D. In the Near-term, the Forest Service Should Consider Brooks and Haynes' Low Scenario As the Most Likely Estimate of Market Demand for Tongass Timber.

In all drafts of their analysis, Brooks and Haynes chose not to describe any of these alternate scenarios as most likely, however, the authors did include the statement: "a scenario in which the derived demand for Tongass timber falls to 70 million board feet is quite plausible." Brooks and Haynes at 12 (May 26, 1997 draft). While this statement is conspicuously absent from the final document, several references in the final document support the same general idea.

Due to past market trends, expectation of continued high logging and manufacturing costs, and weaknesses in Japanese markets, the authors suggest that the low scenario is the most likely to occur.

The 'low' scenario is predicated on the assumption that markets for Alaska wood will improve: "[I]n the low scenario, Alaska was assumed to recover some of the markets lost to other producers; the recent trends in production and market share for Alaska are reversed but only to a limited extent." Brooks and Haynes at ii. Given past trends, however, assuming any gains in market share for Alaska wood is optimistic: "Alaska's lumber production and market shares nevertheless have decreased steadily for more than

20 years, suggesting that the disadvantages may outweigh any advantage resulting from the value of Alaska's raw material." Id. at 7. "[A]ny gain [in market share] will be a reversal of trends observed over the past 20 years." Id.

In forming the 'low' scenario, Brooks and Haynes assumed that higher costs limit Alaska's share of markets. The authors give no indication that these higher costs will disappear in the future:

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"Historically, harvesting and manufacturing costs in Alaska were 30 to 50 percent higher than those in the Pacific Northwest. In addition to increases in harvesting costs resulting from changes in management practices, competition for timber and the elimination of long-term timber sales have increased wood costs for Alaska mills."

Brooks and Haynes at 9.

Thus, it seems likely that logging and manufacturing costs will continue to increase in Southeast Alaska, because higher cost disadvantages will not disappear. See O'Toole, Review of Tongass Forest Plan Assumptions about Timber Receipts and Costs, (Oak Grove, OR)(The Thoreau Institute, Nov. 14, 1997)(attached).

Finally, recent changes in Japanese markets make the 'low' scenario even more likely. The Japanese economy has lately been in a prolonged recession. Japanese housing starts have spiraled down from last year's levels: "[h]ousing starts in December were down 18.6 percent from the same month in 1996 - the 12th consecutive monthly down -- both for wood-based and non-wood-based starts", "North American lumber imports in November were down 55.8 percent from the same month in 1996." Hoshi, "Japan Market Report," *Pacific Rim Wood Market Report* (Feb. 1998)(attached). see also "Japan: Change Ahead," *Pacific Rim Wood Market Report* at 1 (Oct. 1997)(attached).

Brooks and Haynes state the importance of Japanese markets for the Alaska timber industry: "[t]his sensitivity analysis shows model results to be most sensitive to relatively small changes in Alaska's share of North American shipment of softwood lumber to Japan." Brooks and Haynes iii. Furthermore, when discussing the state of Japanese markets, the authors admit that "[f]actors that may make our medium projection too optimistic include further weakening of the Japanese market for hemlock and even greater acceptance of engineered wood products." Id. 15.

Finally, there is no end in sight for Japan's economic woes. See "The Yen: Down She Goes (Again)," *The Economist* (Nov 15, 1997)(attached). Japan's demand for Alaskan wood products will likely remain reduced in the future. Therefore, there is additional reason to consider the 'low' scenario as the most likely scenario, at least in the near term. While some argue that market conditions will improve in 2-3 years, such statements are mere speculation and ignore market trends over the last 20 years.

E. The SDEIS Fails to Disclose and Evaluate How Recent Round Log Exports Affect Market Demand Estimates.

In 1997, the Forest Service authorized the export 104mmbf feet of Tongass timber. This included a large amount of spruce and hemlock in addition to the usual red and yellow cedar export. See SEACC chart derived from F.S. export permit data (attached). See also "Stump Talk," *Pacific Rim Wood Market Report* (Feb. 1998)(attached). The Forest Service must disclose how much round log export occurred on the Tongass during 1997 and evaluate the effects on market demand estimates.

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IV. THE SDEIS FAILS TO PROVIDE A FULL AND FAIR COST/BENEFIT ANALYSIS OF ALL THE ALTERNATIVES, IN VIOLATION OF NEPA.

A. The SDEIS's Economic Analysis is Erroneous.

The Economic and Social Environment Section of the SDEIS is riddled with calculation errors, inconsistencies, assumptions, and unfounded assertions. This biased analysis results in an undeserved support of the Preferred Alternative and a downplaying of the benefits of the Citizens' Alternative.

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1. The Forest Service's Economic Analysis is based on outdated information, in violation of NEPA.

To determine net stumpage rates, the Forest Service claimed to use "current timber prices" and "mid-market prices." However, "current timber prices" come from the 1st quarter of FY 1995 - **more than 3 years old**. To evaluate Forest-Service pre-harvest costs, the SDEIS relies on the FY1994 TSPIRS report for the Ketchikan Area. However, more recent data shows that the U.S. Treasury received \$11.4 million in cash for Tongass timber in FY 1996. At the same time, the total costs of the Tongass timber program were \$32.3 million -- **a Net Return to the U.S. taxpayer of a negative \$20.9 million in FY 1996.**⁵ It is irresponsible and contrary to NEPA requirements to not conduct updated analyses for this supplemental planning effort.

The SDEIS also uses the 1990 706(a) report to characterize changes in timber industry employment. However, such outdated information fails to take into account the vast structural and market changes since 1990 in Southeast Alaska's timber industry, most notably the end of the pulp-mill era and the significant reduction in logging levels on private lands. While the Forest Service has been slow to release revised 706(a) reports in recent years (almost 6 months into FY 1998, the Forest Service still has not released a final 706(a) report for FY 1996 or a draft report for FY 1997), the Forest Service has released five reports since 1990. See SEACC's Comments on the Draft FY 1996 706(a) Report (Nov. 7, 1997)(attached).

⁵ These numbers are based on data from Forest Service budget and receipts reports that are based on the cash accounting stance.

Another example of outdated information used in the SDEIS is the frequent mentioning of pulp production in the discussion of the IMPLAN model. See SDEIS at 4-130. The IMPLAN model is obviously out of date and fails to reflect current levels of job production. The Forest Service should update its models to consider job levels produced under high value-added wood products manufacturing. See "Modeling a Small-Scale Secondary Manufacturing Timber Industry for Southeast Alaska" (August 1997)(attached).

The SDEIS also uses 1990 figures to describe projected growth in recreation and tourism. Id. at 4-135. The Forest Service should have used more updated information, like that contained in the February 1996 version of *Alaska Economic Trends*.

2. The SDEIS's Economic Analysis Fails to Adequately Consider Alternative 1, the "No Action" Alternative

A fundamental assumption contained in the SDEIS's economic analysis is the statement, "[u]nder all project alternatives except for the No Action Alternative, the regional economy will be stimulated..." SDEIS 4-129. The SDEIS goes on to state :

"Because of the estimated low relative level of recreational activity that takes place in the Control Lake Project Area, and because the alternatives would not significantly affect many recreation places and sites, no significant impact is expected on employment and income opportunities in the recreation and tourism industry under the No Action Alternative or any of the action alternatives."

Id. 4-135. The SDEIS fails to provide any analytical data to back up these claims. In fact, information provided by the SDEIS even contradicts this statement. Any of the action alternatives will negatively impact tourism and recreation:

"Implementation of any of the action alternatives may result in the displacement of recreational users to areas outside the Project Area. This displacement would be a result of recreationists seeking specific primitive or semi-primitive recreational opportunities that might no longer be available in the area of active timber harvest or road construction. As more areas are harvested for timber, displaced recreationists seeking primitive or semiprimitive recreational opportunities would find it increasingly difficult to find places to recreate on Prince of Wales Island."

SDEIS 4-135. The SDEIS also states that:

"Projected future recreational use demand in Southeast Alaska during the 1990s is expected to increase by 27 percent for recreation and tourism, 36 percent for sport fishing, and 53 percent for hunting." Id.

"The Forest Service has issued special-use permits to guides using the Thorne River, the North Thorne River, and Logjam Creek." Id. at 3-203.

But the SDEIS fails to disclose how many recreation and tourism jobs depend on the Project Area or to evaluate potential economic impacts on these businesses from the project alternatives. Prince of Wales Island also has great potential for increased recreation and tourism activities. "Some consider it possibly the best steelhead fishing location in North America." SDEIS 3-202. "[T]he number of resident anglers on Prince of Wales is increasing." *Id.* According to the Alaska Department of Labor, tourism is an important and growing sector of the Prince of Wales economy. *See Alaska Economic Trends* (February 1996)(attached). The SDEIS fails to disclose and evaluate the effects of all action alternatives on future recreation and tourism opportunities.

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The SDEIS further fails to evaluate the cultural and economic importance of subsistence resources to local communities. It fails to disclose the socioeconomic impacts associated with all of the action alternatives in terms of subsistence resources. It therefore fails to fully evaluate the benefits to local communities associated with maintaining the highest availability of subsistence resources as in the No Action Alternative.

The SDEIS falsely assumes that "no measurable effects on fisheries resources are expected under the action alternatives because habitat is protected as required to meet the standards and guidelines of the TLMP, TTRA, and NFMA." SDEIS at 4-134. Based on information presented in the "Water, Fish, and Fisheries" chapter of the SDEIS, however, the Forest Service failed to include any of the additional stream protection required by the revised TLMP. As such, the stream protections provided by the SDEIS are inadequate to maintain the long-term health of Southeast Alaska's salmon stocks. The SDEIS fails to disclose and evaluate potential economic impacts on commercial and sport fishing enterprises due to these long-term impacts. It also fails to evaluate the economic benefits associated with maintaining current fish habitat capability as outlined in the No Action Alternative.

Finally, the SDEIS also fails to consider the economic benefits to local communities from initiating an aggressive restoration on the island. Such a program could include maintenance of the existing road system, culvert and bridge replacement, and watershed restoration projects. According to a March 25, 1997 letter to Governor Knowles, Secretary Glickman stated his support for the Governor's efforts to establish a Southeast Alaska Community Economic Revitalization Team (SEA CERT). The Secretary stated that it was "my understanding that the interagency memorandum of understanding implementing SEA CERT is anticipated to be signed by the appropriate officials in Alaska sometime next month." Has this occurred? If so, what are the socio-economic benefits from this program for the island's communities?

3. The SDEIS's economic analysis is biased to favor high-volume alternatives which build the most road miles.

Several statements made in the SDEIS reflect the document's bias towards large-scale alternatives:

"A larger timber harvest is accompanied by greater local expenditures." SDEIS at 4-132;

"A large portion of the costs incurred today will provide infrastructure improvements to support future timber harvests." Id. at 4-129;

"initial project outlays...may result in a higher infusion of cash into the local economy, creating additional demand and thus creating an increased level of local economic activity." Id.

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Such statements are made without presenting any analytical data in support of the claims. Such statements completely ignore the level of wood processing which will likely occur on Prince of Wales Island under each alternative. In both large-scale alternatives, one can expect a majority of the wood to be processed in off-island mills with larger mill capacities. Under the Citizens' Alternative, however, smaller-scale offerings will become available to island-based processors, and more timber will be processed locally, contributing more to local economies.

4. The SDEIS places undue emphasis on timber receipts.

According to the SDEIS, "Alternative 12 is expected to produce the largest receipts to the State of Alaska and the Ketchikan Area while Alternative 11 and 10 would yield progressively lower receipts." 4-133. Although receipts to the State of Alaska are derived from total National Forest receipts, including recreation and tourism related revenues, the SDEIS focuses solely on receipts derived from logging and road construction. The SDEIS should disclose and evaluate the effects of all alternatives on other National Forest receipts (such as cabin rental fees, and outfitter / guide fees). The SDEIS should also disclose the fact that the proposed Forest Service budget for FY 1999 would do away with the current payment to communities system and replace it with an acreage-based, not logging-based formula. How would this new proposal modify this effects analysis? We again remind the Forest Service that it must consider this alternative formula in the NEPA process because it would provide Congress a basis for deciding whether to modify the existing formula or not. See 40 C.F.R. § 1502.14(c).

B. The Citizens' Alternative is the Economically Sensible Alternative

From an economic efficiency, public investment, and economic equity point of view, Alternative 10 is obviously the best choice. It minimizes acreage disturbance, maximizes harvest-able volume per acre, minimizes costs—both logging and Forest Service costs—per MBF, maximizes stumpage \$ per MBF, and minimizes road building. With its emphasis on providing timber for independent, Island-based operators, Alternative 10, produces more long-term local jobs. Alternative 10 also does the best job of leaving areas alone for other uses—tourism, recreation, subsistence, commercial and sport fishing.

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1. The Citizens' Alternative is the most economically efficient.

According to the SDEIS, "Economic efficiency is concerned with getting the most output for each dollar spent." SDEIS 4-123. Using figures presented in the SDEIS, the Citizens' Alternative produces the most timber per Forest Service expenses. The SDEIS shows that Pre-Harvest Costs for the Citizens' Alternative amount to \$1.99 million. SDEIS 4-128. Thus, to prepare 37.7 mmbf, the Forest Service must spend 5.3 cents per bf. This compares to 6 cents per bf for Alternative 11 and 6.1 cents per bf for Alternative 12. Obviously, the Citizens' Alternative is the most economically efficient.

2. The Citizens' Alternative represents the best public investment.

In the SDEIS's Public Investment Analysis, the Forest Service subtracts present-day costs and management expenses from net stumpage revenues to determine the Present Net Value (PNV) for each alternative. Under this analysis, the Citizens' Alternative has the greatest PNV - \$2.897 million compared to \$2.773 million for Alternative 11 and \$2.846 million for Alternative 12. SDEIS 4-128. When PNV is considered in conjunction with acreage disturbed, the Citizens' Alternative wins by a mile, with a PNV / acre nearly three times that of both Alternatives 11 and 12:

Alternative	revenues minus FS fixed costs =PNV	# acres	PNV per acre
10	2,896,628	1,281	2,261
11	2,773,247	3,613	767.57
12	2,846,054	4,452	639.27

The Citizens' Alternative is therefore best at "maximizing harvest volume or efficiency in conjunction with minimization of acreage disturbance." SDEIS at 4-128

3. The Citizens' Alternative is the most economically equitable.

According to the SDEIS, "[e]conomic equity is concerned with who benefits from (jobs, tax base) and who pays for forest management activity." SDEIS 4-123. Given this broad framework, the Forest Service has used narrow parameters such as National Forest receipts to evaluate the different alternatives' values in terms of social equity. Under a broader perspective, however, the Citizens' Alternative provides the most economic equity.

As of March, 1997, the KPC pulp mill is closed and the last long-term contract has been canceled. For the first time in over forty years, Prince of Wales Island no longer has to serve as Ketchikan's timber basket. As a centrally-located timber sale, near the communities of Thorne Bay, Craig, Klawock, Coffman Cove, and Naukati, the Control Lake project offers the opportunity to offer appropriately-scaled timber sales to local, Island-based operators. Given its relatively low-level roadbuilding and its use of conventional logging systems, the Citizens' Alternative is the best opportunity for local

operators. Thus, by keeping as much timber as possible on the island and providing long-term local jobs to island-based processors, the Citizens' Alternative will maximize benefits to local communities.

Furthermore, by breaking the Citizens' Alternative into offerings sized for small, independent operators, the Forest Service will increase competition for Control Lake timber, and likely provide more net return to the U.S. Treasury. And by offering small sales to small, independent operators, the Forest Service will maximize job production. For example, two small-scale Prince of Wales independents, Pete Smith and Jerry Jones provide 2 jobs using 20,000 bf / yr. and 1 job using 200,000 bf / yr., respectively. See Southeast Timber Task Force Report 43-44 (attached). Thus, Mr. Smith and Mr. Jones together provide an average of 9.52 jobs per mmbf. The Forest Service needs to consider these levels of potential job production produced under the Citizens' Alternative.

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In the past, Prince of Wales Island residents were forced to "pay" for forest management activities with reductions in opportunities for subsistence, recreation and tourism, and long-term locally-based wood products businesses. Besides U.S. taxpayers, who lose roughly \$30 million every year on the Tongass timber program, Prince of Wales Island residents will be the individuals who will "pay" the most for forest management activities in the Control Lake project. See "Double Trouble: The Loss of Trees and Money in Our National Forests," (Jan. 1998)(attached). **Therefore, the most equitable alternative would produce the most benefits for Prince of Wales Island residents -- the Citizens' Alternative.**

V. THE SDEIS FAILS TO FULLY INCORPORATE THE NEW STANDARDS AND GUIDELINES FOR FISH HABITAT PROTECTION AS OUTLINED IN THE REVISED FOREST PLAN, IN VIOLATION OF NFMA AND NEPA.

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Reading the SDEIS's chapters on Riparian Areas and Fish Habitat, one gets the sense of having entered a time warp. All pertinent references dealing with riparian areas and fish habitat are made to the 1991 Draft TLMP Revision. No where in the document is a full and fair discussion of the revised TLMP's additional protections for fish habitat. It seems that the Forest Service, in a rush to provide timber to a sagging and saturated market, has produced this document before taking the time to include the new fish habitat protections mandated under the revised TLMP.

A. The SDEIS Fails to Follow the Revised TLMP's Standard and Guidelines Regarding Fish Stream Buffers.

The revised TLMP ROD lists the Control Lake project as a category 3 project. "Projects in category 3 will need to be consistent with all the applicable management direction of the revised plan, except for new standards and guidelines for wildlife listed above in category 2." TLMP ROD at 41. The SDEIS fails to fully incorporate the revised TLMP's increased protections for fish habitat.

1. The SDEIS fails to disclose and evaluate increased protections on Class I and II streams as mandated by the revised TLMP.

In order to provide increased protection for freshwater fish habitat, the revised Forest Plan requires the Forest Service to "[p]rotect Riparian Management Areas, in accordance with the intent of the Alaska Anadromous Fish Habitat Assessment (1995), through application of the direction contained in Process Group standards and guidelines." Forest Plan 4-55. For all process groups, except Moderate Gradient Contained (MC1, MC2, and MC3 channels), "no programmed commercial timber harvest" is allowed in Class I and II Riparian Management Areas. For Moderate Gradient Contained streams, all Class I RMAs are protected, and Class II streams have 100 foot buffers or buffers to the channel side-slope break, whichever is greater. The Forest Service must "[m]anage an appropriate distance beyond the no-harvest zone to provide for a reasonable assurance of windfirmness of the Riparian Management Area." Id 4-66.

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The Preferred Alternative, however, would allow "programmed commercial timber harvest" in approximately 27 acres of Class I and II RMAs. SDEIS 4-25. While the SDEIS claims that "[f]loodplains will not be harvested..." Id 4-27, it is obvious that other process groups will undergo logging within their RMAs. Such activities are inconsistent with the direction of the revised TLMP. Furthermore, the Forest Service must specifically identify and evaluate the extent of stream buffers for each of the various process groups in project area streams.

2. The SDEIS fails to provide adequate buffers for Class III streams, as mandated by the revised TLMP.

In the revised Forest Plan, "[n]o programmed commercial timber harvest in the Riparian Management Area" is allowed in any Class III streams except those contained in the Palustrine Process Group (PA1, PA2, PA3, PA4, and PA5 channels). "While it is true that "[a] project may incorporate site-specific adjustments to the standards and guidelines following completion of a watershed analysis," the watershed analysis allegedly performed on Control Lake project area watersheds fails to meet the guidelines in the revised Forest Plan.

All action alternatives propose logging in the Riparian Management Area - 265 acres in the Preferred Alternative. Clearly, these activities do not comply with the revised Forest Plan. The Forest Service must place buffers on Class III streams to comply with TLMP and fulfill the recommendations of the Anadromous Fish Habitat Assessment.

The SDEIS further claims that

"[m]itigation measures designed to protect riparian areas are based on TLMP Draft Revision standards and guidelines (USDA Forest Service, 1991a), the Riparian Management Area definition, the associated planning level buffer prescriptions (see *Appendix D* of the Draft EIS), and the site-specific buffers prescribed in the field."

SDEIS 4-27. Again, the SDEIS fails to mention the increased buffer protection required by the Revised TLMP. As an afterthought, the SDEIS states "[u]nder the 1997 TLMP Revision, standards and guidelines may require wider buffers in some cases. In those cases, the wider buffers would be implemented during final layout." Such implementation of TLMP outside of the public process violates NEPA's basic mandate -- "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b). Public officials and citizens must be able to review the adequacy of the project's fish habitat protections at this stage of the planning process, before a decision is made.

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B. The SDEIS's Cumulative Watershed Effects Analysis is Deficient.

One of the most important recommendations of the AFHA report was that the Forest Service should perform a cumulative watershed effects analysis before project level planning begins. See SEACC's Appeal of the revised Tongass Plan at 118. While the SDEIS claims that some watershed analyses were performed on the Project Area, the Forest Service failed to adequately perform a watershed analysis to the standards outlined by the revised TLMP. While the new TLMP requires watershed analysis only if a project decision proposes specific adjustments of the standards and guidelines for a process group (Forest Plan, Appendix J), this management direction, however, does not guarantee compliance with NEPA's requirement for a site-specific analysis to be sufficiently detailed to permit assessment of cumulative environmental effects of the proposed action. See 40 CFR § 1502.16. Therefore the Forest Service must perform an adequate watershed analysis before proceeding with this project.

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The revised Forest Plan states that "[w]atershed analysis shall use the basic framework relating to aquatic resources and riparian resources as described in : "Ecosystem Analysis at the Watershed Scale : Federal Guide for Watershed Analysis" (August 1995)."
According to this report:

"[t]he process for conducting ecosystem analysis at the watershed scale has six steps: characterization of the watershed, identification of issues and key questions, description of current conditions, description of reference conditions, synthesis and interpretation of information, and recommendations."

Ecosystem Analysis at 3. Appendix E of the SDEIS summarizes the Forest Service's attempts to perform watershed analyses in the project area. The SDEIS refers to three reports, the Soils Resource Report, the Fisheries and Watershed Resource Report, and the Timber and Vegetation Report, to demonstrate that some level of watershed analysis was performed. But the SDEIS fails to show that the Forest Service synthesized and interpreted the information collected during analysis or that the agency came up with any recommendations. The Forest Service therefore failed to perform the fundamental purposes of watershed analysis -- to "[s]trengthen the project NEPA analysis [and] [f]ocus

interdisciplinary discussion on key watershed-level resources, habitat relationships and management issues." Forest Plan at J-1.

In the revised Forest Plan, the Forest Service states that "[a] more intensive, complex, and field-based watershed analysis will be needed in watersheds with, but not limited to: . . . 5. More than 20 % of the watershed acres with trees of second-growth younger than 30 years old." Forest Plan J-2. In the SDEIS, however, the Forest Service refers to a different CWE threshold, where "cumulative ground-disturbing activities are limited to 35 percent of the total watershed acreage over a 15-year period unless analysis indicates otherwise." SDEIS 4-45. This threshold comes from the 1991 Draft TLMP Revision and is no longer relevant. The second threshold cited by the Forest Service is also irrelevant: "the percentage of RMA acreage harvested along high-gradient contained channel types in third order and larger watersheds is limited to 25 percent of the total RMA associated with these channel types over a 20-year period." *Id.* This threshold comes from the 1991 Draft TLMP Revision and is no longer relevant, especially since buffers are now required on all high-gradient contained channel types. The Forest Service must revise the information presented to be relevant to the new Forest Plan threshold. It should therefore disclose how much of each watershed is made up of second-growth trees younger than 30 years old.

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C. The SDEIS Fails to Adequately Disclose and Evaluate the Effects of Logging on Evapotranspiration.

As outlined by the revised Forest Plan, one of the core topics for watershed analysis is watershed hydrology. Forest Plan J-1. In its discussion of watershed analysis, the SDEIS fails to fully account for effects of clearcutting on evapotranspiration. In discussing watershed disturbance / second-growth, a recent draft handbook for conducting watershed analysis explains that "[r]emoving timber can result in elevated peak flows, depressed low flows, increase in groundwater tables, and other hydrologic effects. USDA, Alaska Region *Watershed Analysis Handbook* at 25. Decreased low flows result from higher evapotranspiration rate caused by the conversion of old-growth timber stands to vigorously growing second-growth vegetation. Such effects are only visible after second-growth is well-established. The decreased low flows resulting from clearcutting, as well as increases in water yields, can adversely affect fish habitat by changing water temperatures, oxygen levels, and eroding headwaters and channel banks. The failure to fully consider watershed hydrology in a cumulative watershed effects analysis prevents the Forest Service from making a reasoned finding that approved management practices will not "seriously and adversely affect water conditions or fish habitat." 36 C.F.R. § 219.27(e).

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D. The SDEIS Fails to Follow the Recommendations of the Alaska Department of Fish and Game.

In its draft report, "Recreational and Commercial Fishery Value," the Alaska Department of Fish and Game outlines its "reserve and restore" strategy, proposed as "the central

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theme for management in the Tongass - that certain lands are best suited for producing fish and should be kept free of human-caused disturbances." Recreational and Commercial Fishery Value 7.⁶ Noting that salmon production and sport fishing use were heavily concentrated in 26% of the VCUs of the Tongass, ADF&G recommended that these VCUS - the Primary Fish Producers - be managed primarily for fish production, at the exclusion of future timber harvest. ADF&G further stated, "[I]n the long term, we believe this strategy will assure the sustainability of the region's commercial, sport, and subsistence fisheries." *Id.* This position is further supported by a recent study completed by M.D. Bryant and F.H. Everest: "Management and condition of watersheds in Southeast Alaska. The persistence of anadromous salmon."⁷ In their conclusion, the authors state, "The presence, number, and distribution of intact watersheds across the landscape of the Tongass are critical elements for sustainable salmon populations in the face of habitat loss elsewhere in southeast Alaska and the Pacific Northwest."

Several streams in the project area qualify as ADF&G Primary Fish Producers, including Eleven Mile Creek, Shinaku Creek, Steelhead Creek, Thorne River, Rio Roberts, and Logjam Creek. All of these streams have undergone some level of logging activity, with the exception of Rio Roberts. **The Forest Service should therefore follow ADF&G's recommendations and stay completely out of the Rio Roberts watershed (VCU 596) in order to preserve the long-term health of southeast Alaska's salmon stocks.**

VI. THE SDEIS FAILS TO FULLY DISCLOSE AND EVALUATE IMPACTS ASSOCIATED WITH LOG TRANSFER FACILITIES.

The SDEIS states that up to four LTFs would be used to transfer logs for the Control Lake project. It fails to describe what method of log transfer would be used at these sites, however. One must assume, therefore, that the LTFs employ traditional in-water log transfer. In order to consider a reasonable range of alternatives, the Forest Service should expand its analysis to include onshore storage with barging of logs, and helicopter transfer of logs to barge, in addition to traditional in-water log transfer.

All potential impacts on the human environment from these various alternatives must be disclosed, including impacts due to bark debris and from filling tidelands. The Forest Service analysis must show that it is not feasible and prudent to adopt any of the several zero-discharge alternatives available to it before allowing in-water transfer of logs. The Forest Service must also disclose credible and complete monitoring data showing that operation of LTFs will comply with State of Alaska water quality standards, including the State's antidegradation policy. See 18 AAC 70.011(9).

The Forest Service should also analyze the probability of use of LTFs under each alternative. Since the Citizens' Alternative is designed to benefit small, independent

⁶ A copy of this "draft" report is attached. Although we understand that the ADF&G Commissioner's office approved this report, the authors still intend to make minor formatting edits (i.e., page numbers) before it is released formally.

⁷ A copy of this study is also attached.

operators based on Prince of Wales Island, a large part of the timber under Alternative 10 would likely be processed on the Island. Therefore, under Alternative 10, use of LTFs would likely be much less than for Alternatives 11 and 12, which will likely be processed mostly off-island. The Forest Service should consider these different effects in its analysis of impacts due to log transfer.

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VII. THE SDEIS FAILS TO FULLY DISCLOSE AND EVALUATE IMPACTS ON WILD AND SCENIC RIVERS.

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In *Lifeblood of the Rainforest*, Southeast Alaska citizens' nominated 67 Tongass Rivers for Wild and Scenic River designation.⁸ Under this proposal, the Thorne River / Hatchery Creek System would receive Wild River Status for 24 miles, Scenic River Status for 14 miles and Recreational River Status for 4 miles. SEACC remains committed to seeing this Citizens' Proposal adopted into law. We hope the Forest Service will improve its list of suitable rivers through the appeals process. See SEACC's Appeal of the Revised Tongass Plan 48 (attached). Again, as stated in our TLMP appeal, the Forest Service's excuse for not recommending Wild river status for part of the Thorne River / Hatchery Creek "avoiding excessive fragmentation of the river corridor" is unreasonable.

A. The Forest Service Has Failed to Follow the Forest Service Handbook's Guidelines Pertaining to Wild and Scenic Rivers.

Chapter 8 of the *Land and Resource Management Planning Handbook* requires the Forest Service to identify a wild and scenic river proposal adopted in a Forest Plan EIS as a "preliminary administrative recommendation for wild and scenic river designation" subject to "further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States." See FSH 8.41(2). Given the fact that over 30 separate administrative appeals have been filed contesting the ROD and FEIS for the revised Tongass Plan, it is possible that the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States will make changes to the Tongass Plan, including its suitability determinations for Wild and Scenic Tongass Rivers. By allowing industrial logging within the Thorne River / Hatchery Creek corridor (VCU 575), the Forest Service may preclude any possible future changes in the river's suitability determination. By failing to disclose or analyze this set of circumstances in the project SDEIS, the Forest Service has violated NEPA and ignored direction contained in the Forest Service Handbook. We further request that Road 3016, currently within the river corridor, be obliterated and replaced with a foot trail.

⁸ In Intervention Comments submitted to Chief Dombeck on TLMP Appeals #'s 97-13-0095, 00998, 0104, 0115, and 0122 (Dec. 18, 1997), SEACC and the Tongass Rivers Coalition amended the *Lifeblood of the Rainforest* proposal by dropping our recommended designation for the Niblack Lakes and Streams system. Like the Forest Service, our eligibility recommendation was based in part on a list, "65 Important Watersheds," prepared by ADF&G in 1977. With respect to the Niblack river system, however, the 1977 report was incorrect.

B. The SDEIS Fails to Fully Disclose and Analyze the Significant Environmental Consequences of Deciding to Degrade the Potential Designation of the Thorne River / Hatchery Creek System as a Wild and Scenic River.

Not only did the Forest Service fail to follow its own handbook and wait for the completion of the appeals process for the TLMP revision, it also fails to perform the required environmental analysis in the SDEIS. NEPA requires the Forest Service to evaluate the consequences which flow from any decision which does not protect the outstandingly remarkable values of all "eligible" rivers, including the Thorne River / Hatchery Creek. Because of the qualifications noted above in FSH 8.41(2), Thorne River / Hatchery Creek must still be considered an "eligible" river for Wild and Scenic River designation. The SDEIS fails to offer such a meaningful evaluation and therefore violates NEPA.

In the SDEIS's discussion of Wild and Scenic Rivers, the Forest Service simply restates the TLMP ROD's decision to recommend only Scenic and Recreational River status for the Thorne River / Hatchery Creek, and thus completely sidesteps any attempt at meaningful analysis. Before the Forest Service decides to degrade the eligibility of a potential Wild and Scenic River, NEPA requires them to 1) describe the area to be affected, 2) evaluate environmental effects, and 3) provide a full and fair discussion of significant environmental impacts. The SDEIS fails in all of these duties. It fails to evaluate and discuss the direct, indirect, and cumulative effects of degrading the river's eligibility for future Wild and Scenic River designation as required by NEPA. 40 C.F.R. §§ 1502.16(a),(b);1508.7.

In fact, the SDEIS never discloses the fact that authorizing industrial logging within the Thorne River / Hatchery Creek corridor will preclude designation of the river by Congress as a Wild and Scenic River. The public and decision maker are forced to infer that such an effect would occur from the roundabout discussion in the SDEIS. This is contrary to the letter and spirit of NEPA. Without a straightforward and meaningful analysis of such direct, indirect, and cumulative impacts, the public and decision makers are unable to make informed decisions and meaningfully participate in the planning process.

By precluding designation of the Thorne River / Hatchery Creek System as a Wild River, the proposed development commits the corridor to all development activities allowed under the new Tongass Plan LUD for the area, Old-Growth Habitat. Such activities include industrial mineral development, development of a transportation corridor, and major commercial recreation development. The SDEIS never evaluates the effects of any of these activities which flow from this project decision, and thus violates NEPA.

VIII. TLMP AND THE PREFERRED ALTERNATIVE FOR THE CONTROL LAKE SDEIS FAIL TO ADEQUATELY PROTECT THE ALEXANDER ARCHIPELAGO WOLF.

As is discussed in SEACC's appeal of the 1997 TLMP, the Plan does an inadequate job of protecting viable and well-distributed populations of wolves. SEACC's TLMP Appeal at 33-42 (attached). SEACC has strong concerns that the deer density standard in TLMP does not fully implement the recommendations of the Alexander Archipelago Wolf Conservation Assessment. In TLMP, the Forest Service confused deer density per square mile with deer carrying capacity per square mile and adopted a standard requiring a deer carrying capacity of 13 deer per square mile. This is an incorrect application of the scientific recommendation outlined in the Wolf Conservation Assessment (1997). This error is pointed out by one of the Assessment's chief authors:

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"A minimum density of 13 deer/square mile will require a carrying capacity of about 18deer/square mile. The Forest Service confuses this point in their discussion in the EIS. Then, they compound the error by referencing a third number (5deer/sqaure mile) from a different, unpublished paper and suggest these values (5,13 and 18 deer/square mile) represent a range a suitable deer targets. This is incorrect. Eighteen deer per square mile is what they should manage for."

Letter from Kirchhoff to Waldo, Earthjustice 1 (Nov. 18, 1997)(attached).

In the Control Lake SDEIS the Forest Service fails to live up to NEPA's requirement that the information be of "high quality" and that the information be "accurate" 40 C.F.R. § 1500.1(b) (emphasis added). According to the SDEIS (at 3-86): "...sufficient habitat should be maintained to support at least five deer per square mile in areas where deer are the primary prey species." The Forest Service references a study from 1992 as the basis for this finding. Application of this deer standard could be disastrous for wolf populations in the Control Lake Project Area. In the Conservation Assessment, the authors recommend maintaining a *minimum* average density of deer equal to 5 deer *per square kilometer*; this equals 13 deer/square mile.

Dave Person, another of the Wolf Conservation Assessment authors has also expressed serious concerns that the information contained in the Control Lake SDEIS is inadequate and inaccurate. "The wolf section of the DEIS needs to be updated using information about roads, mortality, denning ecology, etc. from the wolf conservation assessment...The recommendation of maintaining an average deer density of 5deer/square mile would result in at least a 75percent reduction of wolves from the current population level. An appropriate density is about 15-18 deer/square mile if the objective is to assure a reasonably high probability of maintaining the current density of wolves." See Letter from Person to Streuli, Acting District Ranger, Thorne Bay Ranger District at 5 (June 7, 1996)(attached)(emphasis added).

As detailed in the SDEIS (at 3-88), the Unites States Fish and Wildlife Service was petitioned to list the Alexander Archipelago Wolf as threatened under the Endangered Species Act. The petition was based on factors such as present and future habitat destruction and modification due to clearcutting, and inadequate road access management procedures. The USFWS undertook a status review of the Alexander Archipelago Wolf and determined that listing was not warranted. In order to comply with NEPA's requirements that information provided to the public in EIS's be of, "high quality" and the product of "accurate scientific analysis," the Forest Service needs

to disclose what information the USFWS relied upon to make their decision not to list the wolf. The cursory information provided in the Wildlife section of the SDEIS does not support the conclusion that the Forest Service's preferred alternative will not seriously harm project area wolf populations.

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The new TLMP spells out very specific standards and guidelines that must be adhered in order to preserve present day wolf populations over the long-term. The lack of information provided in the SDEIS makes it difficult for the public to determine whether or not the Forest Service is applying these measures as prescribed. Merely telling the public what it intends to do does not live up to the standards of reasoned discussion required by NEPA. The Forest Service needs to disclose any analytical data supporting the efficacy of its proposed mitigation measures, especially when contrary information exists.

IX. THE FOREST SERVICE'S PREFERRED ALTERNATIVE FAILS TO PROTECT SUBSISTENCE, VIOLATING ANILCA.

For anyone that utilizes the project area for deer hunting, the future looks bleak. According to the SDEIS (at 4-145), "Cumulative timber harvest in the Project area WAA's is expected to create a significant possibility of a significant restriction, (of subsistence) even with restriction of non-rural harvest at some point in the future." After making this admission the Forest Service fails to adequately justify its draft findings that this project is necessary, uses the minimum amount of public lands, and that reasonable steps were taken to minimize adverse impacts, in violation of section 810 of ANILCA.

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A. The SDEIS Fails to Show that a Significant Restriction of Subsistence Resources is "Necessary."

In its short narrative about ANILCA and TTRA (SDEIS at 4-153), the Forest Service relies more on past history than it does on the present or the future. Referral to the 4.5 billion board foot per decade mandate of ANILCA is irrelevant, since it was repealed in 1990. As a matter of fact, the 450 mmbf per year mandate was dumped because Congress found that a timber target that high could not be met without negatively impacting subsistence and other renewable forest resources. The Forest Service also misinterprets the intent of TTRA by claiming that "[t]he TTRA removed the 4.5 billion board feet requirement from ANILCA but directed the Forest Service to seek to meet market demand for the planning cycle and left the volume requirements and the contract area for KPC in place."

This statement is incredibly misleading and fails to disclose to the public vital information. First, according to the Ninth Circuit Court of Appeals, Section 101 of TTRA cannot make restriction of subsistence necessary. Second, there are no volume requirements and there is no contact area for KPC.

Market demand for timber is subordinate to principles of balance multiple use under TTRA. Furthermore, Section 810 of ANILCA gives subsistence a higher degree of protection than that afforded by multiple use principles. To use market demand for timber as a justification

for restriction of subsistence turns the law on its head. If meeting market demand for timber is justification for restriction of subsistence, then it's the timber sales; not subsistence, that should give way. By preparing a timber sale which provides timber in excess of market demand while causing significant restriction to subsistence, the Forest Service is unlawfully elevating the market demand provision of TTRA over section 810's requirement to protect subsistence uses.

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B. The SDEIS's Minimal Public Lands Finding is Contrary to Law

Section 810 of ANILCA requires the Forest Service to show that "the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy or other disposition" before it can restrict uses. In an attempt to prove that a minimum of public lands are being used, the SDEIS states:

"The impact of a viable timber harvest project always includes alteration of old growth habitat, which in turn always reduces projected habitat capability for old-growth associated subsistence species. It is not possible to lessen harvest in one area and concentrate it another without affecting one or more rural community's important subsistence use areas."

SDEIS at 4-153.

Who says? The Forest Service tries to give this argument credibility by providing dated, incomplete information about the nature of timber industry in other places in the SDEIS. Not only are there ways of logging that do a better job of preserving old growth habitat characteristics, there is another alternative, alternative 10 which provides a substantial amount of timber to industry, uses less land than the preferred alternative, and leads to fewer negative impacts to subsistence resources in the project area. If logging and road building must proceed in the Control Lake Project area, the Citizens' Alternative does the best job of using the minimal amount of public land. The tired old reasons -- Congressional timber mandates and timber contract obligations -- can no longer be used as excuses to log excessive volumes, from an unnecessarily large area, to the detriment of subsistence resources and the people dependent on those resources.

C. The Forest Service Must Substantiate It's Claim that "Reasonable Steps" were taken to Mitigate Impacts on Subsistence Resources

Section 810 of ANILCA requires that "reasonable steps were taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions." 16 U.S.C. § 3120(a)(3)C. The SDEIS fails to provide adequate information on the specific steps taken to minimize adverse impacts to subsistence resources. If the Forest Service is serious about minimizing impacts to subsistence, the Citizens' Alternative should be adopted as the preferred alternative. If the goal is to minimize impacts to subsistence resources, then the Citizens' Alternative is the best choice among the action alternatives. According to the SDEIS (at 4-153): **"Among the action alternatives, Alternative 10 would produce the lowest effects on subsistence and Alternative 12 would produce the highest."** (emphasis added)

The SDEIS also inappropriately refers to the ability of the Federal Subsistence Board to restrict other users to protect subsistence use. The Federal Subsistence Board's authority lies outside the scope of this SDEIS and should not be considered as a basis for a Forest Service finding. Section 810 orders the Forest Service to show that the agency took reasonable steps to minimize adverse impacts on subsistence. The Forest Service cannot merely leave the dirty work to an advisory board. Recent experience on Prince of Wales Island with the proposed closure of certain POW GMU's to urban hunters led to a firestorm of controversy. This was a drastic measure proposed by the Southeast Alaska Federal Subsistence Regional Advisory Council partly in response to Forest Service sponsored habitat degradation. The responsibility for protecting subsistence falls squarely on the shoulders of the Forest Service. But if the Forest Service insists on deferring to the Regional Advisory Council, then they should use the Council's recent letter (attached) supporting the citizens' alternative as their guide.

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X. THE SDEIS FAILS TO FULLY DISCLOSE AND EVALUATE IMPACTS ASSOCIATED WITH ROADS UNDER THE PREFERRED ALTERNATIVE.

Under Alternative 11, the Forest Service would authorize the construction and reconstruction of 78 miles of roads. After construction, 52 miles of the roads would be closed to public access. The SDEIS fails to disclose the amount of purchaser road credits available to purchasers under each alternative. Since all proposed roads appear to be permanent roads, one must assume that all road construction will be paid for using purchaser road credits. The Forest Service must disclose and evaluate how much purchaser road credit will be used to construct the 52 miles of roads planned for closure. Clearly, the only purpose for these roads is logging. What study or analysis was performed to show that the proposed roads fit into a management goal?

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The SDEIS also notes that the majority of the Preferred Alternative's roads are 'local' roads (61 miles) which allow "use of lower construction standards." SDEIS 4-117. The Forest Service must disclose and evaluate the relative effects on fish habitat and water quality due to different levels of road construction. What are the 2400-17 allowances for post-sale maintenance of these and other roads in the project?

The Forest Planning Regulations enacted pursuant to NFMA state:

"Special attention shall be given to land and vegetation for approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water...No management activities causing detrimental changes in water temperature or chemical composition, blockages of water courses or deposits of sediment shall be permitted in these areas which seriously and adversely affect water conditions or fish habitat."

36 C.F.R. 219.27(e)(emphasis added). The Preferred Alternative proposes to construct 219 stream crossings, resulting in increased sedimentation and increased risks of stream blockages. Before installing these stream crossings, the Forest Service must fully analyze the topography, vegetation type, soil, climactic conditions and management objectives for the surrounding areas.

Such analysis must show that the location, design and construction of the proposed crossings will not cause a serious adverse effect on water quality or water uses.

SEAC

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The Forest Service must also supply credible monitoring data to back up its claims that proposed stream crossing will not cause "... detrimental changes in water temperature or chemical composition, blockages of water courses or deposits of sediment shall be permitted in these areas which seriously and adversely affect water conditions or fish habitat." See 36 C.F.R. § 219.27 (e). For example, the Thorne Bay Ranger District should fully disclose how many miles of road currently exist in the district, the level of maintenance actually provided those roads, and the condition of all existing culverts and their effectiveness in providing fish passage.

XI. THE FOREST SERVICE IMPROPERLY DEFINED ITS PROPOSAL TO EXCLUDE CONSIDERATION OF OTHER PENDING PROPOSALS WHICH MAY HAVE SIGNIFICANT CUMULATIVE IMPACTS ON NORTH PRINCE OF WALES ISLAND.

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Before preparing an EIS for a particular project, the Forest Service is required to undertake a "scoping process" to identify what "issues" and "actions" will be analyzed and subject to a particular EIS. See 40 C.F.R. §§ 1501.7(a)(2), 1502.4(a). The CEQ regulations further require that "[c]umulative actions, which when viewed with other proposed actions have cumulatively significant impacts" must be considered together in a single EIS. Id. § 1508.25(a)(2). The CEQ regulations further caution that "[a] proposal may exist in fact as well as by agency declaration that one exists." Id. § 1508.23

The SDEIS fails to consider cumulative actions which have cumulatively significant impacts on the environment of the surrounding area, including the Lab Bay, Polk Inlet, Luck Lake, and Staney Creek Timber Sales. The SDEIS also fails to consider the cumulative impacts of other actions, including state timber sales and logging on private lands near the project area.

Each of these "cumulative actions" have been actually proposed and could have cumulatively significant impacts on the fish, wildlife, subsistence uses and recreational settings of North Prince of Wales Island. The CEQ regulations require the Forest Service to evaluate the direct, indirect, and cumulative impacts from all of these proposed projects in one comprehensive EIS. 40 C.F.R. § 1508.25(a)(2).

Additionally, each of the above projects represent "connected actions," since they each contribute to the development of a permanent road network for northern Prince of Wales Island. CEQ regulations require "connected actions" to be considered together in a single EIS. See 40 C.F.R. § 1508.25(a)(1).

The Forest Service's decision to restrict the scope of the Control Lake SDEIS prevents it from educating itself and others about the larger context in which

decisions affecting the environment of the surrounding area, thereby reducing the quality of the decisions made and rendering the EIS inadequate. Limiting the scope of this EIS is inconsistent with the purpose, goals, and procedures of NEPA. The failure to take a look at the cumulative impacts from actual proposed projects on the resources and uses of North Prince of Wales Island— this NEPA process – prevents this FEIS from contributing to the quality of the agency's decision, in violation of the goals and "action-forcing" purpose of NEPA. See 40 C.F.R. §§ 1500.2(c), 1501.2, 1502.2, and 1502.5.

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XII. THE SDEIS DEMONSTRATES THE PROBLEM WITH THE NEW TWO-STEP PLANNING PROCESS ADOPTED IN THE REVISED TONGASS PLAN FOR MAKING MANAGEMENT DECISIONS.

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The Revised Tongass Plan substantially hampers the public's right to know, understand and participate in decisions affecting their public lands by dropping the requirement for a mid-level planning stage. The "two-step" planning process adopted for the Tongass in the 1997 revised TLMP is unworkable. It moves from the macro level (a 17 million acre forest) to the micro level (individual timber sales, powerline proposals, roads, and mining plans) without an intermediate step. This process will cripple the Forest Service's ability to conduct a credible cumulative impact analysis. Without conducting public planning at some intermediate geographic scale, such as North Prince of Wales Island, the public's ability to understand and meaningfully participate in planning for the sustainable use of lands and resources important to the long-term stability of their communities is impaired.

The SDEIS demonstrates the principal reason why the two-step process doesn't work on the Tongass – the Forest Service does not comply with the letter and spirit of NEPA. Instead of fully integrating the NEPA process in the early stages of development in this special area, the Forest Service's approach to encouraging and facilitating public participation in the NEPA process is to issue project-level decisions in a piecemeal fashion, one project at a time.

Rather than using the NEPA process for the Control Lake project to collect and analyze important resource inventories for North Prince of Wales Island, the Forest Service stayed focused on just a single piece of this ecological puzzle. The Forest Service thereby violated NEPA by failing to "initiate and utilize ecological information in the planning and development of resource-oriented projects." See 42 U.S.C. § 4332(2)(H). In order to fulfill its responsibility as "trustee of the environment for succeeding generations," 42 U.S.C. § 4331(b)(1), the Forest Service was obliged to collect and analyze comprehensive and accurate resource inventories for North Prince of Wales Island, which is almost entirely under Forest Service jurisdiction. This was not done. Such leadership would have fulfilled the Forest Service's responsibility under NEPA to encourage and facilitate informed agency and public review of the Control Lake project and other actual proposed projects that will have cumulatively significant impacts on the quality of the surrounding area's environment.

In conclusion, we urge the Forest Service to select an adjusted Alternative 10, the Citizens' Alternative, in the decision for the Control Lake Timber Sale. After adjusting the alternative to comply with the Revised TLMP and after reworking the offering schedule to provide an adequate supply of appropriately-scaled offerings to small, independent operators based on Prince of Wales Island, Alternative 10 will provide the agency with a real-world example of a new way of doing business on the Tongass.

SEAC-25

Thank you for carefully reviewing these comments.

Best Regards,



Buck Lindekugel
Conservation Director



Tim Bristol
Grassroots Organizer



Marc Wheeler
Special Projects Coordinator

List of Attachments, in Chronological Order

- SEACC's Appeal of the Revised Tongass Plan, Sept. 25, 1997.
- Letter from Tom Briggs, Craig City Administrator, to Steve Silver, Roberstson, Monagle and Eastaugh, Jan. 13, 1998.
- Memo from Steve Brockman USFWS to Nevin Holmberg, USFWS , Jan. 9, 1998.
- Memo from Steve Brockman to Nevin Holmberg, Feb. 2, 1998.
- The Elevemile and Honker Divide Citizens' Alternative .
- Letter from George Leonard to Sen. Ted Stevens, April 23, 1991.
- Letter from Sen. Ted Stevens to George Leonard, April 16, 1991.
- Letter from O.J. Graham to Michael Lunn, September 21, 1990.
- O'Toole, Randall, Review of Tongass Forest Plan Assumptions About Timber Receipts and Costs, (Oak Grove, OR: The Thoreau Institute, Nov. 14, 1997).
- Hoshi, "Japan Market Report," *Pacific Rim Wood Market Report*, February 1998.
- Barr, Linda Keller, "Japan: Change Ahead," *Pacific Rim Wood Market Report*, October 1997.
- "Down She Goes Again," *The Economist*, Nov. 15, 1997.
- *Export Permits Granted by the US Forest Service Valid in 1997*, SEACC memo.
- "Senator Murkowski Demands End to Tongass Timber Exports," *Stump Talk, Pacific Rim Wood Market Report*, Feb. 1998.
- SEACC's comments on Draft 1996 706A Report, Nov. 7, 1997.
- Katz, D., Modeling a Small-Scale, Secondary Manufacturing Timber Industry for Southeast Alaska, Aug. 1997.
- Boucher, J. and Tromble, K., Alaska Economic Trends, Alaska Department of Labor: "A Trends Profile, Prince of Wales Island".
- Southeast Timber Task Force Report, pgs. 43 and 44, Oct. 1997.

List of Attachments (cont.)

- The Wilderness Society, Double Trouble : The Loss of Trees and Money in Our National Forests, January, 1998.
- Alaska Department of Fish and Game, Division of Sportfish: Salmon Production and Sportfishing Use, Oct. 1995.
- Bryant, M.D. and Everest, F.H., Management and condition of watersheds in Southeast Alaska: the persistence of anadromous salmon.
- Letter from Matt Kirchhoff to Tom Waldo, Earthjustice Legal Defense Fund, Nov. 18 1997.
- Letter from David Person to Charlie Streuli, Thorne Bay Acting District Ranger, June 7, 1996.
- Letter form Southeast Alaska Federal Subsistence Regional Advisory Council, to Ketchikan Area Forest Supervisor, March, 1997.

Responses to Southeast Alaska Conservation Council

- SEAC-1** The Forest Service has been active in leading the transition to a new timber industry in the Tongass, especially on Prince of Wales Island. The Thorne Bay Ranger District offers timber in 15 to 20 small sales per year that range from a few trees to about 2.0 MMBF. The Thorne Bay District Ranger and staff have been working closely with timber operators to develop sales that better meet the needs of the developing independent sales program. The Craig Ranger District has a similar program that contributes potential timber to the small sale operators on the island. Small sales in this program have been sold from the Control Lake Project Area in the past and it is expected that similar sales will be offered in the future. The preliminary implementation planning for the Control Lake Project Area indicates the Selected Alternative in the ROD will be offered in 17 timber sales ranging from 0.2 to 11.2 MMBF. Approximately one-half of these sales are expected to be less than 2.0 MMBF, with five sales less than 1.0 MMBF.
- The Control Lake Citizen's Coalition's efforts are appreciated and have been instrumental as reflected in the Control Lake ROD. Specifically, the decision is responsive to all of the key issues listed. Your support of Alternative 10 is noted.
- SEAC-2** The Control Lake proposed activities are consistent with the revised Forest Plan and associated ROD. Unit-specific modifications were made to maintain high-value marten habitat in VCU 597.2. These modifications were developed with the USFWS and ADFG and are specified in Chapter 4 of the Final EIS. In other VCUs, the marten Standards and Guidelines stress leaving residual trees and islands of trees within harvested areas. Approximately 74 percent of the Selected Alternative are partial cut harvests with the remaining 26 percent in clearcut harvests with reserve trees.
- SEAC-3** None of the Old-Growth Habitat Reserves in the Control Lake Project Area are in lands in over-select status. When land selections are submitted to the BLM for conveyance, the Forest Service, in cooperation with the USFWS and the ADFG, will evaluate the functionality of the remaining viability strategy. If a change in land allocations is deemed necessary to achieve the Forest Plan old-growth strategy, the Forest Plan will be amended to ensure the old-growth conservation strategy is maintained. Note that the Selected Decision defers harvest in the Rio Roberts watershed, the east portion of VCU 593 associated with the Western Peninsula and Elevenmile, and north of the 30 Road and along the northern boundary of the Honker Reserve. This will maintain the option for these areas to be evaluated in a future forest-wide review of the conservation biology strategy.
- SEAC-4** The Selected Alternative is fully consistent with the Forest Plan. Final EIS text has been revised to be fully consistent with the Revised Forest Plan concepts and language. All Class III streams will receive buffers in accordance with Forest Plan Standards and Guidelines. Additionally, no harvest is planned on the Kaikli, Karheen, Kitkun, or Maybeso soil series in accordance with the Forest Plan Standards and Guidelines.
- SEAC-5** The small amount of area deemed inconsistent with the Revised Forest Plan in Alternative 10 did not change the overall framework of the alternative or have a significant effect on the outputs of the alternative. For these reasons, the alternative was not changed in the Supplemental Draft EIS. Alternative 10 has been fully updated along with other alternatives in the Final EIS.
- SEAC-6** The 94 MMBF and 78 miles of road referred to in this comment are located in the Proposed Action section of Chapter 1 and not in the Purpose and Need section. Furthermore, in Chapter 2, all alternatives are considered fully consistent with the Forest Plan including the No Action alternative. Each alternative is a different approach with different emphasis in moving toward the desired future condition. There is not a preset volume target to be achieved by the Selected Alternative. Each of the alternatives, including No Action, were considered as options to meet the purpose and need.

Responses to Southeast Alaska Conservation Council

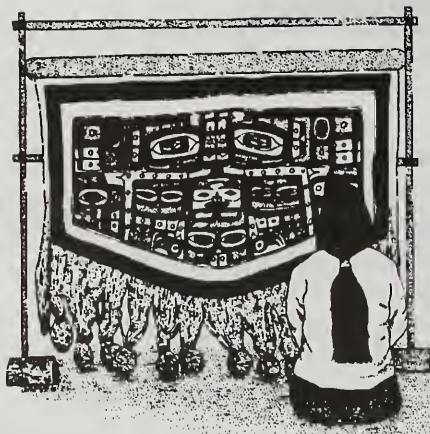
- SEAC-7** The alternative with the least amount of impacts is actually the No Action alternative, which is identified as the environmentally preferred alternative in the ROD. As noted in your comment, of the action alternatives, Alternative 10 generally has the least effect on physical and biological resources, primarily because it has the lowest number of acres treated and associated facilities. The Selected Alternative, as specified in the ROD, considers more than just minimizing physical and biological effects. It seeks to balance the social and economic effects with the physical and biological. This balance will have the greatest total net benefits to society. As noted in the ROD, the Selected Alternative provides for a beneficial mix of resources for the public within the framework of existing laws, regulations, policies, public needs and desires, and capabilities of the land.
- SEAC-8** In Forest Plan implementation, the desired future condition when compared with the existing condition helps identify project opportunities. For example, Alternative 12 in the Supplemental Draft EIS is one representation of estimating how much timber harvest opportunity is available in the Control Lake Project Area at this time under all Forest Plan Standards and Guidelines. We have used this as an upper limit on the range of alternatives for the project. The other alternatives, including No Action are various responses to significant NEPA issues identified during the project. None of the alternatives in the Supplemental Draft EIS had a predetermined volume target. The No Action alternative was considered in detail. In addition, the Final EIS states "This alternative serves as a baseline against which to measure the effects of the action alternatives." See response to SEAC-6.
- SEAC-9** Table 2, referenced in Appendix A, represents an annual or semi-annual estimate of the expected timber sales for the multi-year timber sale program. Sales not included in a NEPA decision represent a best estimate when the sale program is updated. Using different numbers for a given planning project throughout the life of the planning process is not uncommon. For example, the Control Lake Project Area was expected to yield 187 MMBF in the early stages of planning, then was estimated to yield approximately 94.0 MMBF as represented in the Supplemental Draft EIS. The anticipated output with the Selected Alternative is now 57.9 MMBF. The next periodic update to the multi-year action plan will reflect the Control Lake NEPA decision.
- SEAC-10** The Brooks and Haynes study is used appropriately in the DEIS. Appendix A also indicates that the study did not account for changes in the industry, such as the opening of the new mill on Gravina Island, upgrading the mill in Klawock, reopening the mill in Wrangell, and the addition of a veneer plant at Ward Cove. To differing degrees, these changes in the industry represent secondary and tertiary manufacturing. The overall relationships of this value-added industry are not totally known, but it is reasonable to expect increased values for timber. The combination of the study's estimated demand and ongoing changes in the industry clearly indicate a high demand for timber in southeast Alaska. Timber demand tends to be dynamic, with prices fluctuating up and down. The prices that are bid for the sales from this project will be the best indicator of the demand for this timber. If there is no demand for these sales, they will not be purchased.
- The 1995 and "mid-market" figures you reference were used to estimate a range in market conditions, because the market tends to be very dynamic. In the Final EIS these are labeled as "low" and "high" market values to be easier to understand. The intent of the economic efficiency analysis is to help identify areas with various economic factors that may affect the economic feasibility of an alternative or portions of an alternative. By looking at representative starting values (pond log values) at higher and lower market conditions, individual units, groups of units, alternatives, etc. can be assessed. The low value was chosen because it was generated from a detailed appraisal for the Project Area using the mid-market pond log value that represents a more long term historic value. The 1995 value came during a relatively high market period. As noted in the Final EIS, the pond log values do not include expected increases in values that are likely to occur due to secondary and tertiary manufacturing at the primary manufacturing facility.

Responses to Southeast Alaska Conservation Council

- SEAC-11** The EIS uses potential effects on resources such as recreation and fisheries in conjunction with Forest Plan social, economic, and project analyses to draw conclusions, compare alternatives, and make reasoned decisions.
- The Forest Service does not agree that the Control Lake project is in violation of Title VIII of ANILCA or TTRA.
- SEAC-12** Your comments on Alternative 10 are noted. The economic relationships are not the same in the Final EIS. Approximately half of the timber sales are expected to be less than 2.0 MMBF in the Selected Alternative. These will provide opportunities for the small independent operators as you suggested. PNV of the timber account does not capture all the economic benefits and costs. Some of these benefits and costs are intangible and require a qualitative balancing. The Selected Alternative achieves this balancing as stated in the ROD.
- SEAC-13** The Final EIS has been revised to clarify that it is fully consistent with the Revised Forest Plan including stream buffers specified on all Class I, II, and III streams. One major difference in estimated harvest unit volumes between the Supplemental Draft and Final EIS is related to such buffers. No harvest is proposed in Forest Plan specified buffers.
- SEAC-14** As noted in the Supplemental Draft EIS, the components of watershed analysis as identified in the Forest Plan have been accomplished through the completion of the Control Lake EIS. A stand-alone watershed document was not prepared as it would have been duplicative and was not expected to yield new information that would significantly contribute to the understanding of the effects of the alternatives, in context of supporting a reasoned decision. As noted in the Forest Plan, Appendix J, "[A] watershed analysis must be completed for any project decision that incorporates site-specific adjustment of process group standards & guidelines as provided for in the Riparian Forest-wide Standards & Guidelines. Watershed analysis is otherwise not required." No site-specific adjustments of process group standards and guidelines are planned for the Control Lake project.
- SEAC-15** There is no threshold use in the Final EIS for cumulative watershed disturbance. The actual level of cumulative disturbance is displayed for each watershed. The 20 percent figure cited from the Forest Plan is in relation to the intensity of the watershed analysis, should one be performed. A watershed analysis is required only if the Riparian Management Area Standards and Guidelines are to be adjusted.
- SEAC-16** See response to SEAC-14.
- SEAC-17** The Selected Alternative does not enter Rio Roberts watershed. The State of Alaska, including ADF&G, has concurred that the Control Lake project is consistent with the Alaska Coastal Management Program. This includes making allowances for important fish and wildlife habitat.
- SEAC-18** No new LTFs will be needed to implement any of the Control Lake timber sales. All the existing LTFs are under permit. Existing sites at Naukati, Winter Harbor, or Klawock could be used. The Thorne Bay A Frame site is being removed at the end of the use by KPC under the Long-term Contract Settlement Agreement. The Thorne Bay LTF is not expected to be available for use by sales from the Control Lake Project Area. It is anticipated in the future that most logs will not be placed in the water at Thorne Bay, but transported by methods such as barging. Because all timber sales will occur on the open market, predicting who will purchase each sale is not possible. Additionally, a purchaser may process all or a portion of the timber. For example, a small operator may buy a sale that has a portion of one species that the operator processes and he may sell other species he does not use to a different processor. The other processor may or may not be located on Prince of Wales Island. This is the case for all the alternatives.

Responses to Southeast Alaska Conservation Council

- SEAC-19** From the beginning, the Control Lake EIS has designed proposed activities to ensure maintenance of the remarkable characteristics of the eligible river systems. The Forest Plan made recommendations for inclusions of river segments to the National Wild and Scenic River System. Additionally, the Forest Plan established LUDs to ensure adequate protection of the recommended stream segments until they are included. The Control Lake proposed activities are consistent with the Forest Plan LUDs. No activities associated with this project will affect the eligibility of these rivers to be included in the National Wild and Scenic Rivers System. The Selected Alternative allows no logging in VCU 575. The 3016 road will be closed. The future of this road will be analyzed with the Thorne Bay District Access Management Plan, which is in progress.
- SEAC-20** All the alternatives are fully consistent with the Forest Plan LUDs and Standards and Guidelines which specifically address wolves. The revised Forest Plan and its associated standards and guidelines were key in leading to the USFWS determination that listing was not warranted for the Alexander Archipelago Wolf. Based on model predictions, the Project Area will provide an estimated 15 deer per square mile. This represents about 1 percent change from the existing condition. Additionally, the Selected Alternative provides deferrals in the Rio Roberts watershed, Western Peninsula/Elevenmile, and on the northern edge of the Honker OGHR, all of which will be beneficial to wolves. It also includes numerous road closures that will further prevent excessive deer and wolf mortality.
- SEAC-21** The references to ANILCA, TTRA, and the Long-term Contract are intended to reflect the changes over time, while demonstrating an intent to meet a demand for timber, both of which are pertinent to this project analysis. The Control Lake ROD includes Section 810 ANILCA findings.
- SEAC-22** Construction and management of roads is an expected output that as noted in LUDs which allow scheduled timber harvest. These include Timber Production, Modified Landscape, and Scenic Viewshed. The Social and Economic section of the Control Lake EIS shows roads as an investment and assumes these roads would be constructed using Purchaser Credits under the current regulations. The effects of roads on each resource and use is displayed throughout the EIS.
- SEAC-23** As noted in your comment on cumulative effects, the Forest Plan Final EIS includes cumulative effects analyses. The Control Lake Final EIS tiers to that EIS and includes sufficient cumulative effects analyses to address site and project effects for each resource.
- The Forest Service does not agree that proposed activities in the Control Lake EIS are connected with activities in other project areas.
- SEAC-24** The Forest Service believes that the Control Lake EIS complies with the letter and spirit of NEPA. In particular, the public has been significantly involved in the planning of the Control Lake Project Area from the earliest stages. Such involvement resulted in landscape zoning as described in the Draft and Supplemental Draft EISs, development of the alternatives such as Alternative 10, and was a significant influence on LUDs within the Control Lake Project Area.
- SEAC-25** Alternative 10 was instrumental in developing the Selected Alternative. This alternative was adjusted to comply with the Forest Plan. The sale schedule for the project has been reworked to provide an adequate supply of appropriately scaled offerings to small, independent operators on Prince of Wales Island.



SOUTHEAST ALASKA FEDERAL SUBSISTENCE REGIONAL ADVISORY COUNCIL

c/o U.S. Forest Service
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Juneau, Alaska 99802-1628

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Forest Supervisor, Ketchikan Area
Tongass National Forest
Attn: Control Lake SDEIS
Federal Building
Ketchikan, AK 99901

Dear Sir:

The SE Federal Subsistence Advisory Council recently adopted the enclosed resolution in support of the Prince of Wales Citizens' Coalition's Alternative #10 for the Control Lake Timber Sale.

The alternative "intends to meet the needs of local small and independent timber operators while maintaining the integrity of valuable subsistence, recreational and wildlife habitat areas" on Prince of Wales Island.

This alternative involved a diverse group of citizens: loggers, Alaska Natives, biologists, educators, small business owners, and SEACC. The Coalition's alternative provides an opportunity for the Forest Service to take "collaborative stewardship" out of the pages of the Tongass Land Management Plan and put it into practice out in the communities and wilderness areas of the Tongass National Forest.

The SE Federal Subsistence Regional Advisory Council urges the Forest Service to adopt Alternative 10 as their preferred alternative for the Control Lake Timber Sale.

Respectfully submitted,

Mim McConnell for William C. Thomas

William C. Thomas, Chairman

The Southeast Alaska Federal Subsistence Regional Advisory Council:

John Vale, Yakutat
Gabriel George, Angoon
Herman Kitka, Sitka
John Feller, Wrangell

Mary Rudolph, Hoonah
Patricia Phillips, Pelican
Mim McConnell, Auke Bay
Lonnie Anderson, Kake

Marilyn Wilson, Haines
Jeff Nickerson, Klawock
Vicki LeCornu, Hydaburg
Dolly Garza, Sitka
William C. Thomas, Ketchikan

RESOLUTION 98-01

A RESOLUTION REQUESTING THE US FOREST SERVICE MANAGE THE CONTROL LAKE PROJECT AREA UNDER THE SPECIFICATIONS OF THE ELEVENMILE AND HONKER DIVIDE CITIZENS' ALTERNATIVE.

WHEREAS the US forest Service has proposed a timber sale to take place in the Control Lake project area which is directly North of the Communities of Craig and Klawock and directly West of the Community of Thorne Bay, and

WHEREAS a large portion of the Control Lake project area comprises Land Use Designation III areas under the Tongass Land Management Plan, which specify that *"these lands will be managed for a variety of uses. The emphasis is on managing for uses and activities in a compatible and complementary manner to provide the greatest combination of benefits"*, and

WHEREAS the purpose and need of the Control Lake timber sale is to provide timber for either the Independent Operator program, including Small Operators, or the long-term contract, and

WHEREAS the Elevenmile area on the western peninsula is part of the Control Lake project area and fulfills a service to the people of Prince of Wales Island as a traditional subsistence hunting and gathering area, and

WHEREAS the Upper and Lower Steelhead and Rio Beaver drainages have already been well-roaded and therefore are accessible for Independent and Small timber Operators, who could not otherwise access said timber, and

WHEREAS the cutting units in these well-roaded areas may provide for the specific species, size and silvicultural needs of Independent and Small timber Operators, and

WHEREAS the Honker Divide watershed is part of the Control Lake project area and fulfills a service to the people of Prince of Wales Island by providing a wildlife recharge area for the remainder of the island and offers high quality recreational opportunities, and

WHEREAS the people of Prince of Wales Island have formed a coalition called the Prince of Wales Citizens' Alternative which intends to meet the needs of local Independent and Small timber Operators while maintaining the integrity of valuable subsistence, recreational and wildlife habitat areas, and

WHEREAS the Prince of Wales Citizens' Alternative clearly reflects the principles of "collaborative stewardship" which is outlined in the new Tongass Land Management Plan.

THEREFORE, be it resolved the SE Federal Subsistence Regional Advisory Council respectfully requests the US Forest Service manage the Control Lake project area under the specifications of the Elevenmile and Honker Divide Citizens' Alternative.

Responses to Southeast Alaska Federal Subsistence Advisory Council

SAAC-1 Your support for Alternative 10 is noted. Alternative 10 was influential in developing the Selected Alternative.

March 16, 1998

Brad Powell
Area Supervisor
Federal Building
Ketchikan, AK 99901

re: Control Lake Timber Sale

Dear Mr. Powell:

These comments are brief and at the close of the comment period due to my name being dropped from the mailing list for an unknown reason. I previously testified in 1995. I heard last week that the comment period was still open. I own property within a couple of miles of the sale area. After five calls starting at Thorne Bay Ranger District, I reached Larry Lunde. He was very helpful and provided me with the Supplemental Draft.

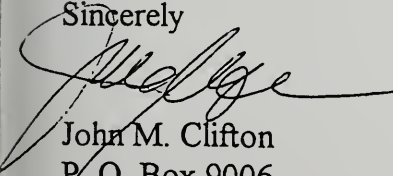
Based on the information provided I support the Forest Services preferred alternative. I feel that the alternative proposed the "citizens coalition" is a continuing attempt to shut down the timber industry. I feel that it is important that the sales are large enough to be commercially feasible and provide for enough new roads that the existing road contractors can stay in business.

I have friends and customers in virtually every community in Southeast Alaska. Those who rely on logging are just starting to feel the impact caused by the loss of the KPC long term contract. I am concerned that if the logging industry is cut back too much that it will reach the point where there is not adequate infrastructure to support the industry. Every year I talk to small operators. Virtually none of them have the ability or the equipment needed to build the roads in this country.

JMC-1

Each of the towns currently have a certain level of synergy. But the communities are like a living organism. You can amputate a small appendage, or even a couple, but pretty soon we will be facing communities that will be crippled, wounded and past the point to revival. I hope that you will continue to be cognizant of the economic importance of an adequate timber harvest to the communities. I welcome the opportunity to discuss this with your economists.

Sincerely



John M. Clifton
P. O. Box 9006
Ketchikan, AK 99901

Responses to John M. Clifton

JMC-1

Your support of Alternative 11 is noted. As noted in the response to SEAC-1, the Forest Service provides a variety of lower volume timber sales. It is expected the Selected Alternative will contribute timber volume in a variety of timber sale sizes that are readily useable to the changing timber industry in Southeast Alaska which is emphasizing value added processing at all levels.

March 12, 1998

John Downs
P.O. Box 327
Thorne Bay, Alaska

Brad Powell
Forest Supervisor
Ketchikan Administrative Area
Tongass National Forest
Federal Building
Ketchikan, Alaska 99901

RE: Control Lake Draft EIS

Mr. Powell:

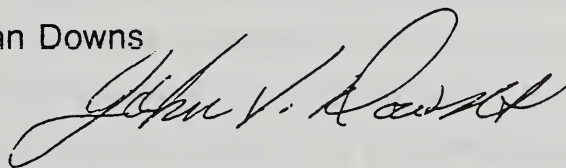
Thank you for choosing alternative 11 as the Forest Services preferred alternative.

Any smaller harvest would force, due to lack of sufficient volume, the larger SBA mills to buy up all sales, even the 5-6 MMBF best suited for the small mills that the Thorne Bay Ranger district additionally is providing for small operators, so they could survive.

With Alternative 11 Towns such as Thorne Bay and Prince of Wales' Goose Creek Industrial Park have a bright future. With alternative 10 we likely are history. We do not have the financial luxury of time to wait for the next EIS. We hang our hat on this one. Please consider me as being in favor of alternative 11.

Sincerely

John Downs



JD-1

Responses to John Downs

JD-1

Your support of Alternative 11 is noted. The Selected Alternative will provide an estimated 57.9 MMBF of timber in a variety of timber sales sizes that should be helpful for different size purchasers.

March 12, 1998

Ernie Eads
#3 Pond Drive
P.O. Box 529
Thorne Bay, Alaska

Brad Powell
Forest Supervisor
Ketchikan Administrative Area
Tongass National Forest
Federal Building
Ketchikan, Alaska 99901

RE: Control Lake Draft EIS

Mr. Powell:

Thank you for choosing alternative 11 as the Forest Services preferred alternative.

As a local small operator living down stream from most harvest units and after careful review of the alternatives set forth in the EIS it is obvious that the harvest level of alternative 11 is imperative to our survival. Any lesser harvest level would wipe out small (25 or fewer employees) saw mill operators such as myself and my neighbors. As you may be aware, for the first time in history, we only recently have been able to purchase industrial land on POW. Many of us have invested all we have now and will have in the future into blasting flat areas out of solid rock and constructing our mills. We are in the sprint position now ready to do, and are doing our part employing the hard workers that are still available on this island.

EE-1

A member of the Control Lake Citizens Collation and Prince of Wales Conservation League has informed me that he is using inaccuracies, deceit and omission of facts in promotion of his agenda. He told me he is distorting statements made by small operators such as myself and using these distortions to accumulate a list of businesses signing a petition in favor of his alternative. While he is telling the truth in that there are not many 50-250 MBF sales in the alternative 11, He omits the fact that the Thorne Bay Ranger district has an additional program providing 5-6

EE-2

MMBF yearly of sales this size. The smaller mills are well covered with timber volume.

Any smaller harvest would force, due to lack of sufficient volume, the larger SBA mills to buy up all sales, even the 5-6 MMBF best suited for the small mills in order to survive.

With Alternative 11 Towns such as Thorne Bay and Prince of Wales' Goose Creek Industrial Park have a bright future. With alternative 10 we likely are history. We do not have the financial luxury of time to wait for the next EIS. We hang our hat on this one.

Sincerely

Ernie Eads

EE-2

EE-3

Responses to Ernie Eads

- EE-1** Your support of Alternative 11 is noted. The Selected Alternative recognized the need for timber from the Tongass and the Project Area.
- EE-2** Your comments on the small timber sale program is noted. See response to SEAC-1 related to the small sales program.
- EE-3** The Selected Alternative is meant to provide a beneficial mix of resources for the public, and although it is less than Alternative 11, it is expected to yield about 57.9 MMBF in 17 timber sales ranging from 0.2 to 11.2 MMBF.

Received 3/16/98

Larry Edwards Box 6001 Sitka, Ak 99835 907-747-8996 FAX-747-4801

March 16, 1998

Bradley Powell, Forest Supervisor
Tongass National Forest
ATTN: Control Lake SDEIS
Federal Building
Ketchikan, Ak 99901

Subj: COMMENTS ON THE CONTROL LAKE SDEIS

Dear Mr. Powell;

The Purpose and Need statement for the Control Lake Project, as well as Appendix-A of the SDEIS which is intended to justify the project's Purpose and Need, are both seriously flawed and inconsistent with the present supply and demand for timber on the Tongass. Consequently, the choice of Alternative-11 as the Preferred Alternative was inappropriate. In these comments I advocate selecting a modified version of Alternative-10 in the Record of Decision. My reasons follow:

1. THE CONTROL LAKE PROJECT IS NOT NECESSARY AT THIS TIME TO SATISFY GENERAL DEMAND FOR TONGASS TIMBER.

At present an inventory of about .72 billion board feet (720 mmbf) of timber is past Gate-2 in the planning process -- this timber is in projects which either have passed the NEPA process or are NEPA-exempt, and includes both timber which is being prepared for sale and timber which has been sold but not yet cut.

In stark contrast to this huge inventory, the timber industry cut only 120 mmbf in 1996-FY and 107 mmbf in 1997-FY. This is about a ten year supply of timber. The nearly 100 mmbf of timber that would be supplied by the Preferred Alternative for the Control Lake Project therefore is not needed to supply general demand for Tongass timber.

Over the next few years projects currently being planned but not yet past Gate-2 in the planning process, such as Control Lake, will raise the post Gate-2 timber inventory to about one billion board feet of timber over the next few years. This assessment considers that 582 million board feet is below Gate-2 in the process and that timber is being consumed at a rate of only about .1 billion board feet per year.

Even without this coming increase in the surplus of prepared timber, however, the current surplus is sufficient to quash any justification to log in controversial areas such as those which have already been well identified by public comment concerning the Control Lake Project.

2. ONLY A REDUCED-SCALE CONTROL LAKE PROJECT IS NEEDED TO SUPPLY RESIDENT, SMALL SCALE INDUSTRY ON PRINCE OF WALES ISLAND.

There is a well-recognized demand for timber in the project area by small-scale operations that are resident on Prince of Wales

Island; however, the timber volume proposed by the Preferred Alternative far exceeds the timber supply that is needed. Alternative-10 more closely approximates but still exceeds the needed supply.

LE-1

My request is therefore that the Preferred Alternative be changed to a modification of Alternative-10.

My further request is that the Record of Decision for the Control Lake Project require that all timber sales approved for this project be sold through District Ranger sales of a variety of sizes not to exceed 500,000 mmbf, and designed to meet the needs of local industry.

LE-2

Other than the needs of small scale industry resident on Prince of Wales Island, there is no need for the Control Lake Project.

3. MODIFICATIONS NEEDED TO ALTERNATIVE-10 BEFORE IT IS ADOPTED.

In VCU-595, units 420, 422, 431 and 433 should be dropped because of wolf use. In VCU-596, unit 421 should be dropped because it is over the divide and in the little touched Rio Roberts watershed.

LE-3

4. ADDITIONAL AREAS AND UNITS THAT SHOULD NOT BE LOGGED IN THE EVENT THAT ALTERNATIVE-10 IS NOT SELECTED.

There should be no further logging in the Honker Divide and Snakey Lakes watersheds. This includes but is not limited to the following units:

	VCU-575	VCU-577	VCU-577
	-----	-----	-----
Units:	411	416	401
	419	417	
	420	418	
	424	431	
	425	432	

LE-4

There should be no logging in the Eleven-Mile area -- VCUs 591, 592 and 593. The area should be deferred from logging and be left roadless by the Control Lake Project.

5. WILDLIFE AND SUBSISTENCE CONSIDERATIONS.

There is already ample testimony and comment in the record from the public and other agencies to demonstrate the unacceptable impacts of the Forest Service's Preferred Alternative for this project. Therefore I am not offering comment on this subject now, although wildlife and subsistence considerations are at the heart of my comments. Suffice it to say, with no legitimate need for the Preferred Alternative since existing timber supply on the Tongass already far exceeds demand, the impacts of that alternative are not acceptable and are contrary to ANILCA, NFMA and other laws. In addition, the project planning violates NEPA in ways that I am sure have been amply detailed by other commenters.

LE-5

Sincerely,

J. Edwards

Responses to Larry Edwards

- LE-1** Note that there is no target volume associated with the Purpose and Need section of Chapter 1. Analysis indicates there is a need to provide timber volume both short and long term from the Tongass National Forest. The Preferred Alternative in the Supplemental Draft EIS indicated the alternative that seemed to best meet all project objectives at the time of preparing the document. Based on additional field investigations, analysis, better incorporation of Forest Plan objectives, and intensive public involvement all the alternatives have been updated and the Selected Alternative has been chosen.
- LE-2** Your request is noted. See response to SEAC-1.
- LE-3** Unit 596-421 has been dropped. The other units mentioned are still in various alternatives including the Selected Alternative. Other efforts have been included in the Selected Alternative that will be favorable to the wolf. Examples include, deferral of units associated with Rio Roberts watershed and units in VCU 575.
- LE-4** The Selected Alternative does not include units in VCU 592 and 593. Three small units associated with existing roads are located in VCU 591 and are included in the Selected Alternative. At least 2 of these units are of the size you suggest for small sales with the other unit small, but will be helicopter logged to eliminate the need for over a mile of new road. See response to LE-3 above.
- LE-5** Your comment is noted. Also, refer to the Record of Decision for detailed information on the Selected Alternative and how the Control Lake project is consistent with various laws, executive orders, et al.

re Control fake Timber Sale

POB 20706
Juneau, Ak. 99802
Mar. 4, 1998

Dear Folks:

I don't see how you could not accept alternative 10 as the best solution to control fake cutting -- what with all the diverse efforts that went in to it. Have so many disparate entities ever come to this type agreement in regard to timber sales - cutting? ?
Give it your support!!

For another reason: don't you think that Prince of Wales Island has been devastated enough by over-cutting -- clearcutting?

It's probably non rare for a Juneauite to care about an issue not in his "back yard"!

Finally we (you & I) need to further support the small wood operations that will generate employment in a value-added manner, not reverting to big business operators intent on corporate profits & in the process destroying the Forest.

Sincerely,
Ward Lander

Responses to Ward Lamb

WL-1

Your support of Alternative 10 is noted. Alternative 10 was important in development of the Selected Alternative. As noted in the response to SEAC-1, the Forest Service provides a variety of lower volume timber sales. It is expected the Selected Alternative will contribute timber volume in a variety of timber sale sizes that are readily useable to the changing timber industry in Southeast Alaska which is emphasizing value added processing at all levels.

March 10, 1998

To: Forest Supervisor
Tongass national Forest
Ketchikan Area
Attn: Control Lake DEIS
Federal Building
Ketchikan, Alaska 99901

From: James Mackovjak
P.O. Box 63
Gustavus, Alaska 99826

Re: Control Lake DEIS

Dear Forest Supervisor:

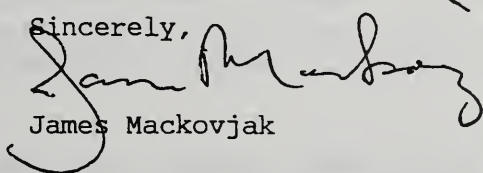
I have been paying attention to the proposed Control Lake Timber Sale since its inception. A lot has changed since then, most notably among them the cancellation of the two long-term timber contracts for Tongass timber. At the original 187 mmbf, the Control Lake Timber Sale was a big one. At the current level of 94 mmbf, it is still a big sale. It is too big a sale.

The Forest Service has been and wants to continue selling huge quantities of irreplaceable old-growth timber for which there basically is no Alaskan market, and has now engaged in the deplorable activity of granting export permits for round logs--100+mmbf in 1997. This is crazy.

The Forest Service needs to get real. So far as I can see, only Alternative 10, the so-called "citizens' alternative," makes any sense, and I urge you to adopt it, as it does the best job of protecting fish, wildlife and subsistence. Additionally, it is the only alternative that adequately addresses the needs and concerns of local timber operators, providing a sustainable level of cutting that doesn't mortgage our future.

Alternative 10, the "Citizens' Alternative" is a good example of what "Collaborative Stewardship" should be about. The Forest Service should take this ready made alternative and show us that it is really serious about collaborative stewardship.

Sincerely,


James Mackovjak

JM-1

Responses to James Mackovjak

JM-1

Your support for Alternative 10 is noted. Alternative 10 was important in development of the Selected Alternative. The Selected Alternative is expected to be offered for sale in about 17 timber sales ranging in size of 0.2 to 11.2 MMBF. About half of these are in the sale size class that is within the capabilities of most small local operators. See also response to SEAC-1.

Forest Supervisor - Ketchikan Area
Tongass National Forest
Federal Bldg.
Ketchikan, AK 99901

Original Submission:

3/9/98 (handwritten)

Duplicate Typed Document:

4/10/98

Re: Control Lake DEIS Public Comments - Ben Mitchell

Dear Forest Supervisor Brad Powell,

I am a retired R-10 civil engineer/logging engineer. My career included 19 years service on the Tongass National Forest. When I first arrived in 1965 at Ketchikan, the original log stringer bridge across Thorne River had just been completed and the sub-grade shovel was near what is now called Goose Creek, working toward Control Lake. I helped build the Control Lake panabode. Until the time I was transferred to Sitka in 1973 I was involved in the original location, survey, design and construction of the logging road (main haul) between Rio Beaver Creek and Sarkar Lake, the Big Salt Road between Control Lake and Klawock, the Hydaburg Road between Harris River and Hydaburg and the road connection to Coffman Cove from its intersection with the Thorne Bay Road near Naukati Lake. Having established now my intimate on-the-ground knowledge of the area, I submit the following comments for the record on the Control Lake DEIS.

BM-1

When I first set foot on Prince of Wales in 1965 it was for all practical purposes an unbroken pristine jungle. Seemingly endless stands of timber ~~as much~~ as 80,000 mbf per acre covered Prince of Wales. "Full-bore" and uncontrolled logging under the 50 year "give away" contract was only about 6 years underway. I witnessed the then common practice of yarding five (5) to seven (7) foot diameter logs down salmon streams while at the same time salmon were attempting to spawn. I witnessed at the same time gravel being dredged from the stream beds for road building. The running water served to wash out the fines, producing good road construction rock which was much cheaper than blasting a quarry pit. One example is FUBAR Creek within the Harris River drainage which is now on the Environmental Protection Agency 303(d) List of Alaska's impaired waterbodies some 38 years after the ~~atrocities~~ was committed. There are many others throughout the Tongass that should be on the 303(d) list such as Katlian River and Nakwasina River and Rodman Creek near Sitka but which have been "covered up" by the Forest Service throughout the years. Bradfield River is another.

As I and my survey crew made our way through the trackless wilderness of a seemingly infinite forest, never in ~~our~~ wildest dreams did we think that within a few short decades this vast area would be over-harvested to the extent that it is today. A parallel to the slaughter of the buffalo in the West.

Now at the end of the century battles are raging over the pitiful remnants of this once mighty high volume old growth forest known as Prince of Wales Island that was once so ~~rich~~ in fish and wildlife resources in addition to a king's ransom in high quality old growth timber. The Control Lake Project Area is the last intact area of significant size on Prince of Wales as you well know.

Although the two "dinosaur" long term contracts have been rightly cancelled, the Forest Service continues to "lag behind the curve" and prostitute its professional and moral ethics to the political pressures of industry and their "owned" lackeys, the Alaska Congressional Delegation, by favoring an alternative for the Project Area that produces 187 million board feet with the construction of 169 miles of road. This on an island that now appears from the air like a plate of spaghetti on a patchwork quilt.

BM
-2

The only shining light, with exception of the No-Action in the alternatives presented is number 10. The Citizens Alternative is the best example yet of what "collaborative stewardship" should be all about. Unfortunately, it is some 20 years late, but better late than continue as before. As the timber industry giants, including the Alaska Native Corporations, have already taken the lion's share surrounding the Project Area and throughout Prince of Wales, what remains must be allocated to local small timber operators to be harvested at a sustainable level of harvest that does not continue to mortgage the future.

BM
-3

Alternative 10 provides the highest financial return to the federal treasury and most importantly to the local and Southeast Alaska Communities long term. Alternative 10 provides the best job of protecting the remaining fish, wildlife and Subsistence opportunities on this once resource-rich island.

The areas surrounding the Project Area, i.e. the entire remainder of Prince of Wales Island has been subject to both the destructive logging practices allowed under the two 50 year long term timber contracts and even the far worse logging practices on the Alaska Native Corporation land grants taken from National Forest lands under ANSCA. Here logging was guided by the toothless and ineffective Alaska Forest Practices Act which was overly influenced by timber industry lobbyists when it was written by the Alaska Legislature.

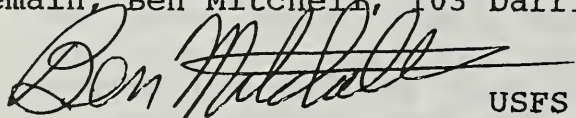
BM
-4

Until the entrenched and vindictive U.S. Forest Service bureaucrats, including some high level retirees still living in Alaska, with conflict of interests inherent in their close ties with the timber industry and the Alaska Congressional Delegation, have ceased to breathe, ethical management of what's left of the Tongass Forest will continue to "lag behind the curve". These dinosaurs must be swiftly forced to retire and be replaced with the visionary's now emerging throughout the Service. Chief Dombeck is one of these visionaries, as well as Regional Forester Phil Janek

I request this document be entered into the formal record of public comment and published in the final EIS. A typed version will be provided at a later date. *This is the "Typed Document" being submitted now for the handwritten*

I remain, Ben Mitchell, 103 Darrin Dr., Sitka, AK 99835

one of 3/9/98



USFS - Retired

4/19/98

Responses to Ben Mitchell

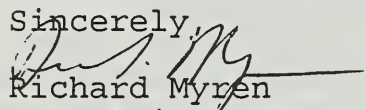
- BM-1** Your historical comments are noted. Even though extensive development has occurred on the northern portion of Prince of Wales Island, the area is still rich in resources as you noted in your historical perspective. The Forest Plan assessed the Island for overall species viability as well as individual species such as the wolf, goshawk, marten and fish resources. The findings in the Plan indicate it will provide an amount and distribution of habitat adequate to maintain viable populations of vertebrate species in the Forest, including Prince of Wales, and will maintain the diversity of plant and animal communities. As you noted the northern part of Prince of Wales is more developed than many areas on the Forest. The Forest Plan allocated 50 percent of the productive old growth to reserves in the Northern Prince of Wales Island province and added mitigation measures that require reserve tree and groups of trees be left in harvested areas to provide large tree structure to be managed with second growth stands of trees. These and other measures are expected to assure northern Prince of Wales Island will continue to be rich in the resources you have noted while some scale of development continues. The Control Lake Selected Alternative fully complies with the Forest Plan. Additionally, the Selected Alternative defers harvest in areas noted as more sensitive in relation to the overall old growth reserve strategy to maintain options for such areas to be added to the reserve system at a future Forest Plan review if deemed necessary.
- BM-2** Note that the Selected Alternative is about 57.9 and not 187 MMBF.
- BM-3** Your comments regarding Alternative 10 are noted. Also note that all alternatives including Alternative 10 have been updated to better reflect additional field investigations and Forest Plan Standards and Guidelines.
- BM-4** Comment noted.

Forest Supervisor
Dave Arrasmith
Tongass Nat. For., Ketchikan Area
Attn. Control Lake SDEIS
Federal Bldg.
Ketchikan, AK 99901

Dear Dave:

As per conservation this week, I have enclosed the typed version with a few corrections and clarifications of the handwritten statement mailed on March 16.. I have not enclosed the three enclosures accompanying the original. Thanks.

Sincerely,


Richard Myren
3320 Fritz Cove Road
Juneau, AK 99801
March 26, 1998

Comments of R.T. Myren on Control Lake DEIS, Volume I.

Page 32-4, 5th para.

"Decreases in late summer low flows are not anticipated . . ." is unfounded. Watershed #1 (WA#1) 96 hectares or approximately 286 acres of Hicks et al., (1991) was 100% cut (and burned), and low flows which the DEIS correctly reports produced low summer flows (5th paragraph, line 3 of the DEIS, page 32-4.).

RTM-1

The proposed cut of a total of 10,603 acres in the project area (pg. 71-4, Table 4-32) through 1994 was equal to about 45 watersheds the size of WA#1 of Hicks et al.. The fact that these watersheds are fragmented and dispersed throughout the project area does not justify that there will be no reduction in stream flows in each of the small drainage systems of the watershed fragments and the consequences will be less adverse relative to the low flow reduction compared to the entire 10,603 acres treated as a single watershed completely cut, with some minor adjustments.¹

The project area can be viewed as composed of many subunits of the quality and importance that for each area cut within it has an effect upon the streamflow, first increasing flows then after a short time decreasing the base flows.

The DEIS is spurious in declaring just because a stream gage is located at a distance from which an acre is cut, as in citing Meehan et al., (1969) (Page 31-4) especially, and for that matter, assuming that effects on summer base flow doesn't occur until some threshold is reached.

Over 20% of the Stanley Creek watershed has been logged and those portions in the Control Lake EIS will insure additional logging of the watershed which calls for a Watershed Analysis as required under Forest Service guidelines. Therefore no further logging should be permitted in any watershed of the present plan that drains into a Stanley Creek tributary.

Page 41-3, 3rd para. "Dissolved O₂ levels." The collateral factors of low stream flows associated with high temperature is just as important as stream temperature, leading to high stream temperature. In fact, low flows during the summer due to lack of precipitation and increased evapotranspiration due to second growth vegetation were the causes of elevated stream temperatures. Hicks et al., (1991) has shown on an approximate 240 acre clearcut watershed in Oregon that reduction in summer flows occurred after short termed increased flow.

RTM-2

The author was on the middle fork of Stanley Creek in summer 1993 and observed young coho salmon mortality in the process with fish still alive but in the last stage of life. The observation occurred in the stretch of stream above the bridge on the middle fork. Upon return to the bridge and the oxygen "Winkler" kit for measuring dissolved O₂ the amount of O₂ in the water was adequate at the bridge site, though such observations of the mortality were made just 1 to 3 hundred yards above the bridge and 1 1/2 to 2 hours after the observed mortality!

Page 42-3, 5th para. "The specific cause.." The statement ". . . research (Pentec's) was designed to address" (parenthesis added) has a competency level equivalent to saying . . research observations on the time the sun rises in the east was scheduled between 1 to 3 in the morning.

RTM-3

Pg. 43-3 4th para. The DEIS is deficient in not listing the amounts of stream-side blowdown as a result associated with cutting landward of the stream. A table of values of the locations, amount of leave strip in existence, amount of blow down, the depth of leave strip and other data should appear in the table.

RTM-4

Pg. 43. "Fish Enhancement Projects." This is an insult! It is analogous to finding a placard next to the Mona Lisa in the Louvre, Paris after having been vandalized and repaired in which the painting no longer carries is charm and meaning because of the impossibility of a competent repair and an outrageous statement on the placard that the Mona Lisa is better than ever when in fact it lost much value and could not be restored. There high producing salmon streams, such as the Control Lake stream, 108 and others have been savagely attacked by the Forest Service land use policies and in imperfect efforts by the State of Alaska to stop the mayhem. The degradation continues to proceed with inadequate leave strips and other measures.

RTM-5

I am again enclosing my, "Did the U.S. Forest Service Care about Fish Resources on the Tongass National Forest?" for its relevance to Control Lake. See endnote # 1 of the paper referring to Control Lake.

RTM-6

Page 40-3, 4th para. "Everest et al., 1981) found that the assessment [of effect of fine sediment upon salmon survival] ranged from inconclusive to severe" (Text in brackets added for clarity.) Well, "inconclusive" assessments were mostly due to the low statistical power of the method to detect an effect. Pella and Myren (1974) showed that the power to detect effects of logging (i.e., effects of sediment on salmon survival, for one) from annual escapement was near impossible because of the large interannual variation in escapements. This work of Dr. Pella and myself demonstrated that no longer could the "health of a population" be judged from stream survey estimates when possible adverse events of populations were present, such as logging effect and the release of sediment. This information caused a sea-change in the way management of the fish resources in areas of logging activity was to be viewed and assessed. Correspondence between myself and former Regional Forester Charles Yates (his statements prepared by fishery biologist Bill Sheridan) on DEIS for the Point Baker timber sale of 1971 and with Forest Supervisor Richard Wilson demonstrated the Forest Service was changing its argument that logging was not damaging to salmon survival to the position that We [the Forest Service] recognize that we cannot prove logging has no adverse effect upon salmon production but we also recognize that we cannot prove that it does." ² This admission was the first agency recognition at the Forest Supervisor level (though later Regional Forester Yates attempted to disown it) that management of the fishery resource had been put on a solid basis in relation to logging effects. From this base the eventual relationship of the need for streamside trees was established for the management of the salmon resource and sports fish resources also benefiting. This path continued and eventually lead to the publication of several papers from the FSL, Auke Bay Laboratory for the need for protecting streamside trees. A foundation was laid for protecting fish habitat and its efficacy was no longer judged upon the sizes of the runs and escapements. Most recently FSL's Woodsmith paper was published, and finally in the TLMP,

RTM-7

TLMP, the Anadromous Fish Habitat Assessment document (AFHA) was published by the F.S.

I have enclosed the **Comments of the Draft Indian River EIS** to provide a template for the kind of analysis of low summer baseflow in the project area. Such analysis could be done by watershed, such as the Rio Beaver watershed, for example, using all timber to be cut to the 100 year rotation and the determine the true effect of second growth upon summer low flows in respect to change in flow compared to old growth forest streamflows as shown in the attachment. The amount of timber would be changed from those shown for Indian River of the enclosure, of course. If the F.S. doesn't know what this is about it is about time they do so and not have someone else doing the work for them.

RTM - 8

Sincerely,


Richard T. Myren

3/23/98

Note: Typed from the hand written statement, mailed to the F.S. on March 16 with additional correction and expansion of the context. My word-processor was non-functional during the time for submission of the DEI"S response explains in part the poorly written submission. A few corrections are made for clarity. The three enclosures initial made for the submission has not been enclosed. I hope the Forest Service can accept this.

file__contrl2

Endnotes

1. Indeed, the streamflows in the small fragments could possibly form more habitat for fish than if all the streamflow of cut areas was organized as flowing from a single clearcut watershed of 10,630 acres. In other worlds there could be more loss of habitat to fish by fragmenting the cutting areas over several areas than if all the cutting could occur in one single watershed.

2. _____. 1974. Tongass National Forest Ketchikan Pulp Company Timber Sale, 1974-1979 Operating Period, April 10, 1974. 196p. See p. 94 and 104.

Responses to Richard Myren

- RTM-1** None of the proposed harvest units are on lands that drain into Stanley Creek. Note that a watershed analysis is required only if adjustments to process group Standards and Guidelines are planned. No adjustments to process group criteria is planned for Control Lake streams.
- The 10,603 acres you say are *proposed* are actually second growth stands ranging in age from seedlings to over 50 years.
- The watershed sections have been updated in the Final EIS. Note that all Class I, II and III streams will be buffered and that in the Selected Alternative only about 26 percent of the harvest is planned to be clearcut.
- RTM-2** Your comment is noted on stream temperatures as it relates to Hicks et al, (1991). This section of the Supplemental Draft EIS points out that even during high fish kills (Stanley Creek, et al) stream temperatures were in ranges considered ideal for salmon production. Although the conclusive reason for the fish kills is not clear, temperature does not appear to be the major factor. Most likely, the high number of adult spawning fish that use up the available oxygen in the water is a major factor.
- RTM-3** See response to RM-2.
- RTM-4** The effectiveness of stream buffers, including windthrow was discussed in Chapter 4 of the Supplemental Draft EIS and in corresponding sections of the Final EIS. Implementation of the Forest Plan stream buffers stresses creation of windfirm buffers.
- RTM-5** Your description of the degraded fish habitat conditions do not match the highly productive fish habitat and fishery resources found throughout the Control Lake Project Area.
- RTM-6** See response to RM-1.
- RTM-7** Your comments on the historic aspects of fish habitat protection is noted. Note that the Forest Plan fish habitat and stream protection measures have included the recommendations of the Anadromous Fish Habitat Assessment.
- RTM-8** Your comments on the Draft Indian River EIS are noted. Note that extensive watershed analyses have been done for the Control Lake Project Area and were summarized in Appendix E of the Supplemental Draft EIS.

Forest Supervisor
Tongass N.F., Ketchikan Area
Federal Building
Ketchikan, AK 99901

Dear Supervisor,

I am writing concerning the Control Lake Timber Sale and would like to offer my comments to the SDEIS. I am in support of Alternative 10 for the following reasons:

- Prince of Wales (POW) Island has been excessively logged in the past. Honker Divide, which is included in the sale area, is one of the largest areas on the island that remains somewhat intact. The Island needs places like Honker Divide to remain wild. Without it, the Island will lose a valuable sustainable economy based on the visitor industry.
- Cumulative impacts should be considered by the SDEIS. Past destructive logging techniques necessitate that the ecosystem in the Control Lakes area be protected. Alternative 10 provides an adequate level of protection. JR-1
- Alternative 10 also provides the Forest Service with a reasonable sale level to promote a local value-added timber economy. Logging plans on POW need to maximize the *economic benefit per tree cut* so the Island ecosystem can recover from the past. Past massive clearcutting has caused the uncertainty in the present timber economy and the solution is to maximize the economic benefit per tree so that a sustainable industry can prosper and the ecosystem can recover.
- It is time for the Forest Service to stop subsidizing the destruction of habitat for short term profit by the timber industry. Alternative 10 requires the smallest subsidy and provides the greatest benefit to local communities.
- Alternative 10 is an initial blue-print for where future Forest management should be heading. SE Alaska needs to move forward to a value added timber industry where local communities benefit from local resources and the economic benefit per tree cut is maximized.

Thank you very much for this opportunity to comment.



Jim Rehfeldt
Juneau, Alaska

Responses to Jim Rehfeldt

JR-1

Your support of Alternative 10 is noted.

Most of the Honker Divide area was allocated to land use designations that do not allow programmed timber harvest in the Forest Plan. Two areas of interest related to the Honker is the west side of the Rio Roberts watershed and along the northern edge near the 3016 Road. The Selected Alternative does not enter these areas and maintains the option of including these areas in more protective land use designations in the future if necessary.

Cumulative effects of all alternatives were considered in the Draft and Supplemental Draft EISs. The Final EIS has strengthened the cumulative effects analysis by incorporating more of the analyses conducted in the Forest Plan Final EIS.

See the response to SEAC-1 and SEAC-10 regarding small timber sale programs and the changing timber industry.

Wales Waterworks
Pete Smith and Valery White
Box WWP (Whale Pass)
Ketchikan, AK 99950

March 10, 1998

Brad Powell, Forest Supervisor
Tongass National Forest
Ketchikan Area
Federal Building
Ketchikan, AK 99901

RE: Control Lake EIS

Dear Mr. Powell,

It is essential that the Forest Service adopt Alternative 10, the "Citizen's Alternative", for the Control Lake Sale Area. It is the only alternative that comes close to meeting the needs and concerns of the local small scale timber operators, like ourselves. It provides for a much more sustainable level of harvest than any of the other alternatives, and we are very concerned about our ability to make a living here in the future if the timber continues to be harvested at previous levels.

This Alternative does the best job of protecting fish and wildlife and the important subsistence areas for those of us who live here.

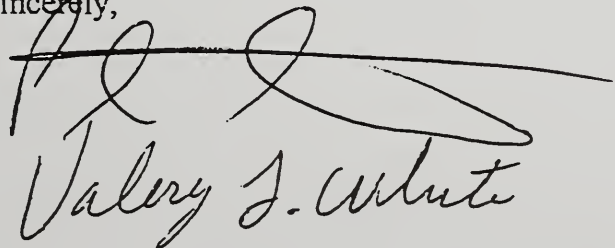
Alternative 10 provides the best financial return to the federal treasury and to our local communities over the long term.

TLMP calls for collaborative stewardship. Alternative 10 was put together by a wide cross section of citizens from Prince of Wales Island, all sharing a legitimate concern for the future of their forest resources. Alternative 10 is an excellent example of collaborative stewardship. If the Forest Service continues to ignore this principal, it will only do more to further increase the amount of dissension and litigation that is currently hampering Forest management on the Tongass.

Please implement the "Citizens' Alternative", Alternative 10, and take a strong step toward a new era of cooperation on the Tongass.

PSVW-1

Sincerely,



Valery J. White

cc: SEACC
Steve Kimball

Responses to Pete Smith and Valery White

PSVW-1 Your support of Alternative 10 is noted. Many of the recommendations of the Control Lake Citizen's Coalition have been included in the Selected Alternative.

6 March 1998.

Songpass National Forest

Federal Building

Itasca, Quebec

99901.

Dear Sirs:

Please accept my following Comments concerning the
Central Lake Project Area Supplemental Draft Environmental Impact Statement.

Continued logging and roading in this area will continue to destroy air, water, wildlife, fish, plant, recreation, scenic, and Red List wilderness resources.

May I suggest that this project area be managed as a Fish Wildlife Plant Habitat Sanctuary with no development activities. And to provide for the recovery and restoration of damaged resources. Including the obliteration of roads.

JS-1

So preserve all old-growth, and including National Old Growth Preservation System. With riparian, wetland, and stream areas managed as Sanctuary units.

And to fully preserve the habitats of the

Humpback whale, Alaskan porpoise, Eskimo curlew, Marbled murrelet, Queen Charlotte Doshawk, and Spotted Frog.

So designate as National Wild Rivers Shanon River and Hatchery Creek.

And to designate the following areas and rivers as Wilderness:

Kogish 75,000

Shanon River 95,000.

Kanta 65,000 (add to the Kanta wilderness).

With all Roadless areas fully preserved permanently.

Sincerely,

John R. Swanson.

John R. Swanson
3400 Edmund Blvd.
Minneapolis MN 55406

7 March 1998.

Mr. Philip Danik
Regional Forester

POB 21628

Juneau, Alaska 99802-1628.

Dear Regional Forester Danik:

Please accept my following comments concerning the
Control Date 2 E D 2.

I urge that this project area be managed as a Fish Wildlife Plant
Habitat Sanctuary,
and with no development activities.

With all old-growth preserved.

To designate the following areas / areas as Wilderness:

Kogish 75,000

Skanne River 95,000

Kanta 65,000 (additions).

Let us save our Nation's Natural Heritage!

Sincerely,

John R. Swanson.

RECEIVED

MAR 17 1998

USDA Forest Service Information Center
Juneau, AK 99801

Responses to John Swanson

- JS-1** Your comments regarding land use allocations are noted. The Tongass National Forest recently completed a full revision of the Forest Plan. Pertinent to the Control Lake Project Area, the Thorne River and Hatchery Creek systems are being recommended as Scenic and/or Recreation River designations and have been allocated to land use designations that will assure the outstandingly remarkable features of the systems will be protected. Over 55 percent of the Control Lake Project Area is now in land use designations that do not allow programmed timber harvest. These allocations are designed to provide key components of the Forest Plan conservation biology strategy, in particular, old growth habitats.

The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's development.

The second part of the report deals with the economic situation of the country. It is a very interesting and informative study of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's economic development.

The third part of the report deals with the social situation of the country. It is a very interesting and informative study of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's social development.

RECEIVED

NOV 11 1961

LIBRARY OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE

Appendix C

Mitigation Measures by Harvest Unit

Appendix C

Migration Patterns of
Honeybees

Alt. Alt. Alt. Alt.

1

Control Lake Project

Alt.		Alt.		Alt.																																
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593-431	0	1	1	0				1				1			1				1				1					1						1		
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594-405	0	1	1	1				1	1			1	1	1	1				1		1															
594-407	0	1	1	1				1	1	1		1	1					1		1																
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Appendix D

Revised Unit Cards

Appendix D

Revised Unit Cards



UNIT DESIGN CARDS

CONTROL LAKE EIS

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 574

UNIT : 434

QUAD : D3-SW



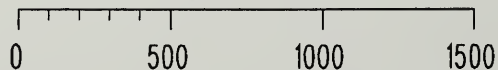
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 574	UNIT #: 443	QUARTER QUAD: D3SW	PHOTO YR/#: 1991/990-52
ACRES: 15.5	VOL.: 370.6 MBF	LOGGING SYSTEM: Swingyard/Running Skyline/Shovel	
LANDSCAPE ZONE: Unit is within the Honker Divide watershed.			
Timber/Vegetation	Field Review: J. Miller, 8/25/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock but includes a few cedar and spruce. Many small seeps, thin soils, and poor soil drainage areas. Slope instability/failure potential existing in the eastern portion due to steep slopes and soil water movement. Good advanced regeneration (candidate for release) consisting of hemlock, cedar, and spruce.			
Logging/Transportation	Field Review: B. Flatz/B. Wilkinson, 9/01/93	Office Review: M. Whitty	
Unit is accessed by Road #3035196 and a short temporary spur. Twenty percent of the unit can be shovel logged; 80% can be uphill yarded using a swing yarder with running skyline. Partial suspension is possible on slopes >60% as required by soils specialist. Partial cutting is possible, but will be difficult due to steep slopes. The southern part of the unit was deleted because suspension requirements could not be met. Economics are fair to good.			
Watershed/Fisheries	Field Review: J. Metzler, 8/10/93	Office Review: T. Stewart	
There is one small Class III stream on the south unit boundary that feeds into a Class II stream just below the unit. This stream should be protected by using directional falling. A slope break buffer will be provided, adjacent areas will be managed to provide a reasonable assurance for wind firmness.			
Soils/Geology	Field Review: J. Metzler, 8/10/93	Office Review: T. Stewart	
One small landslide (20'w x 30'h) was observed at the head of the Class III stream. Soils in the upper portion of the unit are shallow and erodible (but not McGilvery - they're mineral soils). Partial suspension should be achieved in this area (slopes >60%). Geology/Karst (D. Herron/R. Horrocks, 8/19/93): Unit surveyed for karst topography. Unit surface covered by glacial till. No limestone or karst features observed.			
Wildlife	Field Review: J. Metzler, 8/10/93	Office Review: C. Confer	
Signs of high deer use in unit. Only large timber in area - surrounded by nonmerchantable and muskegs. Several lakes in area. Geese observed. Level 1 structure retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Southern half of unit was dropped due to lack of required suspension. Overstory removal (Type E harvest trees 13.0" DBH and larger) below road where uphill yarding permits. Use care to protect advanced regeneration where possible. Type A clearcut in remainder of unit. Directionally fall trees away from Class III stream on east boundary. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F6, F7, F8, W1, W2, W5, W10

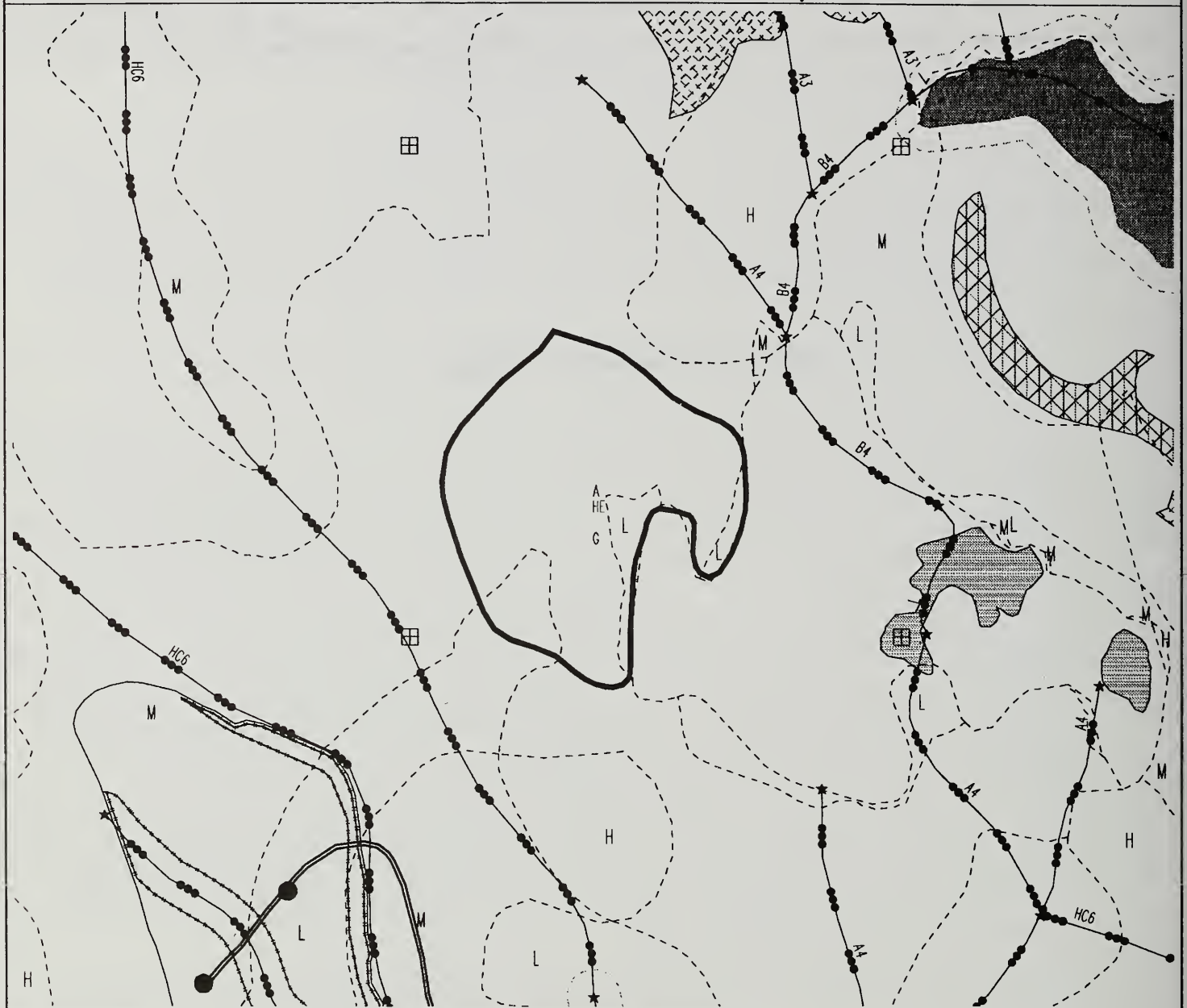
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 403

QUAD : D3-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

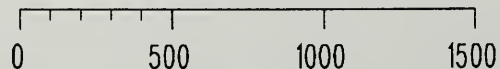
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 403	QUARTER QUAD: D3SE	PHOTO YR/ #: 1991/1090-203
ACRES: 24.9	VOL.: 537.0 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Baird Peak Corridor.			
Timber/Vegetation	Field Review: M. Case, 7/26/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock with some spruce but is lacking cedar. Steep, rocky, and shallow soils. Salmonberry present. Slope instability/failure potential existing. Small failure evident in central-southwest portion. Windthrow damage present in middle portion of unit. Regeneration concerns due to relatively high elevation, shallow rocky soils, and the presence of salmonberry.			
Logging/Transportation	Field Review: J. Doyal/J. Graves, 7/23/93	Office Review: M. Whitty	
This unit designed for Helicopter yarding due to no feasible road access. Average flight distance is 2800 feet. Average flight slope is -10% slope. Economics are fair.			
Watershed/Fisheries	Field Review: B. Romey, 7/14/93	Office Review: T. Stewart	
No streams within unit as laid out on photo and paper (leave unit boundary as is). Bad V-notch outside of unit, Class III. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soil/Geology	Field Review: B. Romey, 7/14/93	Office Review: T. Stewart	
Slumps and wet soils outside of unit to the northeast. Leave unit boundary as is.			
Wildlife	Field Review: B. Romey, 7/14/93	Office Review: M. Hall	
Sapsucker observed. Low to moderate deer use. Retain structure along unit boundary when feasible - Level 1 retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not seen from Honker Divide, priority travel routes, use areas, or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Recommend Type G shelterwood. Use helicopter yarding. Mitigation measures for this unit are as follows: F1, F2, F3, F4, W2			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 404

QUAD : D3-SE



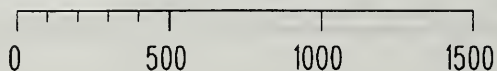
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 404	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-203
ACRES: 35.4	VOL.: 385.0 MBF	LOGGING SYSTEM: Running Skyline/Helicopter	
LANDSCAPE ZONE: Unit is within the Baird Peak Corridor.			
Timber/Vegetation	Field Review: G. Hedin, 7/24/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with some spruce present. Regeneration predominantly hemlock but includes a few cedar and spruce. Moderately low volume, multi-canopy stand with < 50% canopy closure in the southern portion.			
Logging/Transportation	Field Review: J. Doyal/J. Graves/C. Giles	Office Review: J. Doyal/E. Urstadt	
This unit is designed for Running Skyline utilizing a large tower for increased defection. 90% of the unit is downhill logging. Helicopter is designed for the rest of the unit. Blowdown may be a problem. The timbered areas above (north) of the unit should be looked at for future access during final layout. Economics are fair. Unit is accessed by Road #3016200.			
Watershed/Fisheries	Field Review: B. Romey, 7/14/93	Office Review: T. Stewart	
Stream 1 is a Class III, O/W, slope break buffer implemented. Mark unit from slope break, directional fall away from stream buffer. Use V-notch as east unit boundary. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soil/Geology	Field Review: B. Romey, 7/14/93	Office Review: T. Stewart	
Slopes mostly under 50%, stable soils.			
Wildlife	Field Review: B. Romey, 7/14/93	Office Review: M. Hall	
Retain structure along unit boundary when feasible - Level 1 retention. No concerns.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Western "ridge mass" visible from Honker Divide - Retention VQO. The rest of unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Western ridge nose excluded from unit. Northwestern section helicopter log where inaccessible from cable systems. Type C clearcut but leave small islands of small diameter trees. Type B clearcut in remainder of unit. Split yard stream buffer in center of unit. Mitigation measures for this unit are as follows: F1, F2, F5, F6, F7, F8, W1, W3, W4, W10, V1, V2, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 408

QUAD : D3-SE



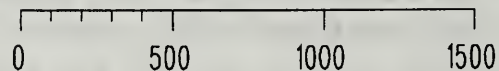
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers



Scale in Feet



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★ Channel Type Change

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 408	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-202
ACRES: 69.2	VOL.: 1080.7 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within the Baird Peak Corridor.			
Timber/Vegetation	Field Review: M. Case 7/23/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock with a few spruce but is generally lacking cedar. Dense understory vegetation. Moderately low volume, mixed species, multi-canopy stand with < 50% canopy closure. Rocky, relatively thin soils in some areas.			
Logging/Transportation	Field Review: J. Doyle/ J. Graves, 7/21/93	Office Review: E. Urstadt	
Unit designed for Running Skyline utilizing a large tower. Two settings will use a swing yarder with running skyline and two will use a 100 foot tower with Running Skyline system. Ninety percent of unit is downhill logging. A Class I stream in the center-east section implemented with a 100 foot buffer. Partial cut is not possible where increased defection with a larger tower is required. Economics are fair. Unit is accessed by Road #3016200.			
Watershed/Fisheries	Field Review: G. Jackson, 7/14/93	Office Review: T. Stewart	
This unit is bounded on the southwest and northwest sides by fish-bearing, Class I streams. A Class I stream bisects the unit. 100' buffers are required on all. No selective harvest buffers are required. There are extensive areas of muskeg within the unit boundary. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soil/Geology	Field Review: G. Jackson, 7/14/93	Office Review: T. Stewart	
Moderate slopes, stable soils. No special concerns noted.			
Wildlife	Field Review: G. Jackson, 7/14/93	Office Review: M. Hall	
Moderate deer use. Bear sign throughout unit. No special concerns noted. Open canopy forest and meadows. Retain Level 1 structure. Contiguous old-growth.			
Visual/Recreation	Field Review:	Office Review: S. Bedross	
Unit is not seen from Honker Canoe Route.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Class I streams on southwest, northwest, and center of unit require 100' TTRA buffers. Class II stream in southeast portion of unit requires 100' TTRA buffer. Type B and Type D clearcut. Southern boundary west of bisecting stream was extended south into notch between two Class I streams. Mitigation measures for this unit are as follows: F4, F5, F6, F8, F10, W1, W4, W10, R1

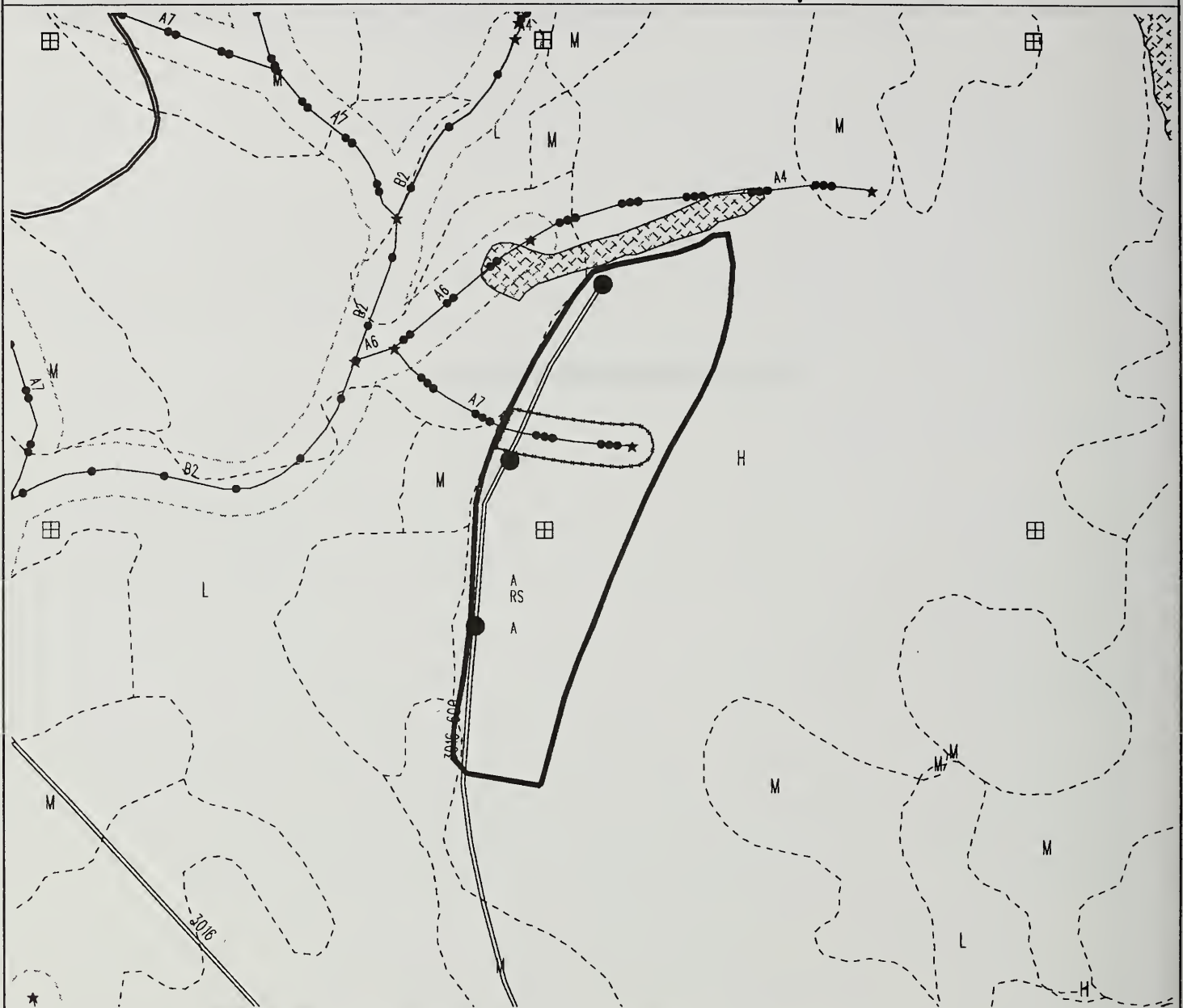
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 409

QUAD : D3-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrota
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

Landings

Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet

0 500 1000 1500

May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 409	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-202
ACRES: 28.9	VOL.: 611 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is located in Honker Watershed on border of Baird Peak Corridor.			
Timber/Vegetation	Field Review: G. Hedin, 6/30/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration predominantly hemlock but includes some spruce. Rock bluffs on the higher elevations of the unit. Slope instability/failure potential existing due to steep slope and soil/water movement. Steep slope, relatively shallow soils, and poor soil drainage areas within unit. Poor regeneration due to high elevation, slope and soils.			
Logging/Transportation	Field Review: S. Field/B. Flatz	Office Review: J. Doyle/E. Urstadt	
Unit designed for Running Skyline yarding. Yarding is downhill and swing yarder with running skyline is recommended. Partial suspension recommended. Economics are fair. Unit is accessed by Road #3016200.			
Watershed/Fisheries	Field Review: R. Rogers, 6/21/93	Office Review: G. McNaughton	
Small Class III stream (WQ) green/white flagging - directional fall/split log. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness. No selective harvest buffers are required.			
Soil/Geology	Field Review: R. Rogers, 6/21/93	Office Review: G. McNaughton	
Large slide present north of (not in) unit and thin, organic, wet soils noted throughout unit. Steeper to east with cliffs. Achieve as much suspension as possible to minimize soil disturbances.			
Wildlife	Field Review: H. Sloan/R. Rogers, 6/21/93	Office Review: M. Hall/G. McNaughton	
No concerns. Level I snag retention. Goose sign in muskeg north to northeast and west of unit. Low wildlife use overall. Retain Level 1 structure; contiguous old-growth. Fledgling hawk observed on ground. No species identification.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Not seen from Honker Canoe Route.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Unit excludes slide to north and steeper (> 75%) slopes to east. Split yard Class III stream slope break buffer. Retention VQO required above 1,200' to 1,400' elevation). Type A clearcut. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F6, F8, W1, W5, W9, W10, V1, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 410

QUAD : D3-SE

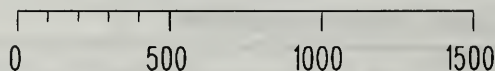


- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCut Buffers

★ Channel Type Change

Scale in Feet



May 07, 1998



















CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 410	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/17-1090-113
ACRES: 32.3	VOL.: 761 MBF	LOGGING SYSTEM: Running skyline	
LANDSCAPE ZONE: Unit is within the Honker Watershed.			
Timber/Vegetation	Field Review: B. Hasebe, 7/3/93	Office Review: J. Goering	
Species composition includes hemlock, spruce, and cedar. Predominantly hemlock regeneration. Alaska yellow-cedar decline evident. Little to no mistletoe evident in canopy. Shallow soils overlying bedrock. Many small water drainage areas within unit. Windthrow damage present in southwestern corner of unit due to shallow soils and poor soil drainage.			
Logging/Transportation	Field Review: S. Field/B. Flatz, 7/02/93	Office Review: M. Whitty	
Unit designed for running skyline yarding system. 2/3 is downhill logging and 1/3 is uphill. A possible blind lead is in the upper north boundary (northwest corner). Partial suspension is required. Blowdown may be a problem on the south boundary. Economics are good. Unit is accessed by Road #3016400.			
Watershed/Fisheries	Field Review: R. Rogers, 6/21/93	Office Review: G. McNaughton	
Streams 4, 5, and 6 are Class III; implement slope break buffers and directional fall and split yard away from streams. Stream 7 is Class I; needs 100' TTRA buffer. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: R. Rogers, 6/21/93	Office Review: G. McNaughton	
Achieve partial suspension yarding over entire unit as much as possible to minimize disturbance of thin, organic, wet soils. Small debris flow deposit in ephemeral channel flagged G/W. Directional fall and split yard away to avoid remobilizing flow.			
Wildlife	Field Review: H. Sloan, 6/21/93	Office Review: M. Hall	
No concerns. Structure retention Level 1. Goshawk survey conducted - no detections. Juvenile red-tailed hawk observed south of unit at end of road. Woodpecker - audible detection. Level 1 structure retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Implement slope break buffers and split yard Class III streams in unit. Achieve partial suspension to extent possible. Type A clearcut. Mitigation measures for this unit are as follows: F3, F4, F5, F6, F8, W1, W4, W10, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

QUAD : D3-SE



- | | | | |
|---|---|---|-----------------------------|
|  | Revised Control Lake Project Boundary |  | Lakes and Ponds |
|  | Post-Field Unit Boundary w/ Setting Codes |  | Second Growth Units |
|  | Other Post-Field Unit Boundaries |  | MMI 4 |
|  | USFS Timber - Volstrata |  | McGilvery > 41 |
|  | Eagle Tree Buffer of 330ft |  | Landings |
|  | Existing & Rebuilt Roads |  | Stream & Lake NoCUT Buffers |
|  | F.S. Roads Under Construction | | |
|  | Post-Field Proposed Roads | | |
|  | Class 3 Treatment Zone | | |
|  | Ahmu-Class 1 & Stream Chantypes | | |
|  | Ahmu-Class 2 & Stream Chantypes | | |
|  | Ahmu-Class 3 & Stream Chantypes | | |
- Scale in Feet
-

★ Channel Type Change

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 411	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/17-1090-115-91
ACRES: 18.4	VOL.: 560.9 MBF	LOGGING SYSTEM: Slackline System	
LANDSCAPE ZONE: Unit is within Honker Watershed.			
Timber/Vegetation	Field Review: G. Hedin, 7/2/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Regeneration predominantly hemlock but includes some spruce. Steep slope, rocky, relatively thin soils and exposed rock. Some poor soil drainage areas. Poor regeneration In the northwest corner due to poor soil drainage.			
Logging/Transportation	Field Review: S. Field/B. Flatz, 6/30/93	Office Review: E. Urstadt	
Unit is accessed by Road #3016400. Unit designed for a downhill slackline system. Partial suspension required.			
Watershed/Fisheries	Field Review: B. Romey, 6/18/93	Office Review: G. McNaughton	
Stream 1 is a Class III; directional fall away from stream. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soil/Geology	Field Review: M. Minnillo, 6/18/93	Office Review: G. McNaughton	
Upper slopes steep, generally 65% to 75% slope. Unstable shallow soils with existing windthrow. Several boulders and devil's club chutes throughout unit, especially along southern unit boundary. Lower eastern boundary to 1,400'.			
Wildlife	Field Review: M. Minnillo, 6/18/93	Office Review: M. Hall	
Maintain structure along western unit boundary, otherwise no concerns. Level 1 retention. Wolf kill; deer remains in unit. Contiguous old-growth with alpine habitat.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Directional fall and yard away from buffered Class III stream on southwest boundary. No selective harvest buffers are required. Shallow, wet, organic soils should receive at least partial suspension over most of unit. Type A clear-cut. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F6, F8 W1, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 412

QUAD : D3-SE



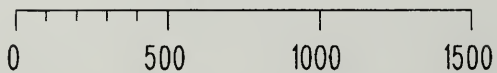
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

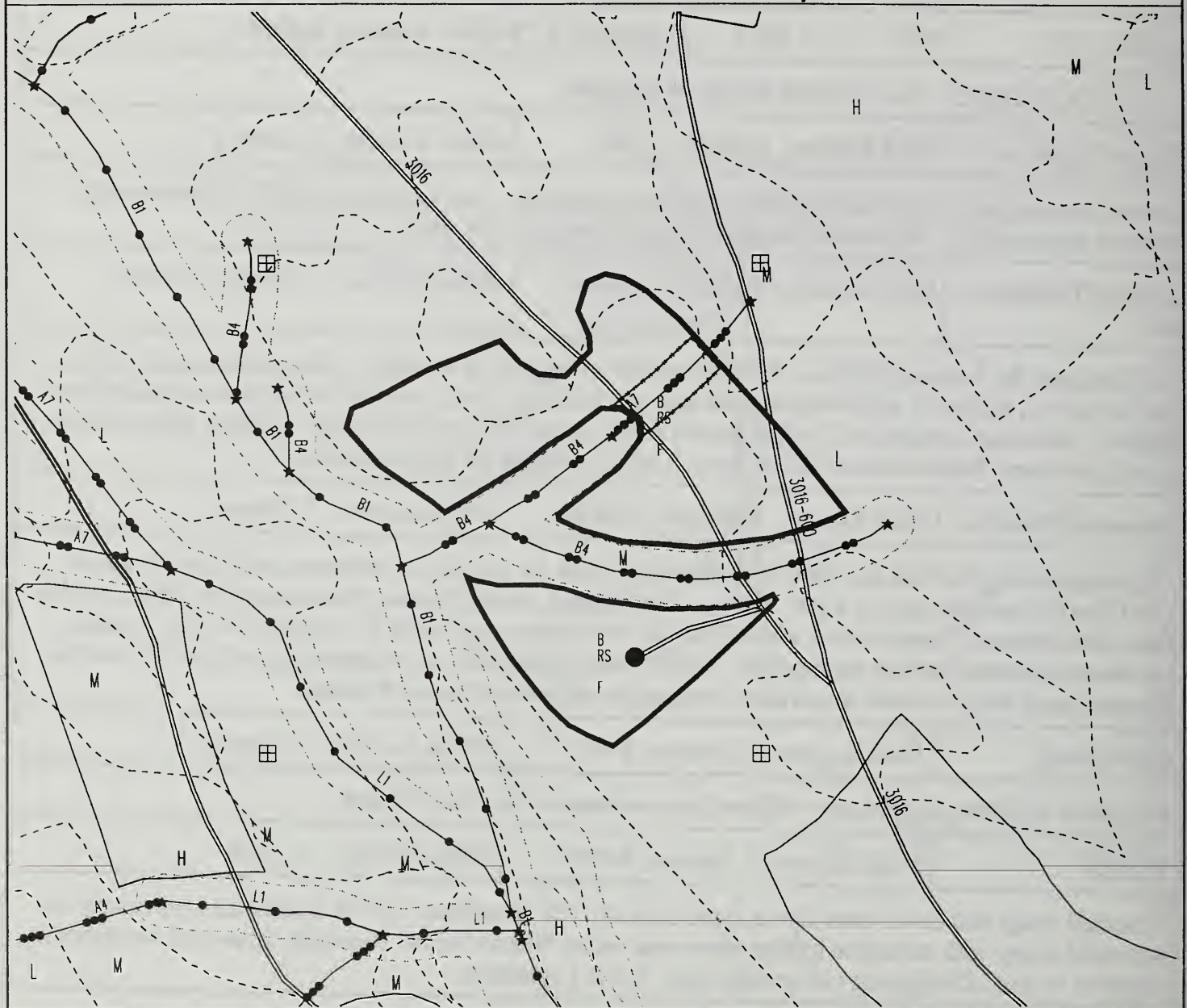
VCU #: 575	UNIT #: 412	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-115
ACRES: 30.9	VOL.: 731.2 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within Honker Watershed.			
Timber/Vegetation	Field Review: J. Miller, 7/3/93	Office Review: J. Goering	
Species composition predominantly cedar with some hemlock. Few spruce are present. Predominantly hemlock regeneration. Windthrow damage evident throughout the unit.			
Logging/Transportation	Field Review: S. Field/D. Keister	Office Review: J. Doyal/E. Urstadt	
Unit designed for Running Skyline. Seventy percent of logging is downhill. The north one-half of unit has blowdown, thin soils, pistol-butted trees and low volume. North one-half of unit was excluded from harvest. Two short sections of 100 foot stream buffer are on SW and SE corners. Feather edges to minimize blowdown. Economics are fair to good. Unit is accessed by Road #3016500.			
Watershed/Fisheries	Field Review: J. Metzler, 8/09/93	Office Review: T. Stewart	
The streams along the east and west boundaries are Class IIa below 550' elevation and Class III above. The Class IIa portions require a 100' buffer. The channels are not incised; trees should be directional fall away from stream. There are four small Class III tributaries green/white in the unit to be split yarded. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soil/Geology	Field Review: J. Metzler, 8/09/93	Office Review: T. Stewart	
No special concerns. Slopes are < 60% with no evidence of slumps or slides.			
Wildlife	Field Review: J. Metzler, 8/09/93	Office Review: M. Hall	
Abundant snags and down-trees above approximately 700' elevation. Unit is located on a previously unharvested slope, with subalpine habitat above and valley bottom below. Northern three-toed woodpecker observed in unit. Contiguous old-growth tract. Level 1 retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not seen from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
In northern half of unit look for opportunities to leave non-merchantable timber outside of yarding corridors to serve as leave islands. Class IIa stream is not within unit. Split yard and directional fall away from streams on margin of unit. Class III green and white streams within unit do not require split yarding; however, achieve as much suspension over creeks within unit as is feasible. Because of windthrow potential, recommend Type A clearcut. Mitigation measures for this unit are as follows: F1, F3, F5, F6, F8 W1, W5, W10, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 413

QUAD : D3-SE



- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

May 07, 1998

Scale in Feet

0 500 1000 1500

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 413	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-201
ACRES: 34.6	VOL.: 769 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within Honker Watershed.			
Timber/Vegetation	Field Review: B. Hasebe, 6/28/93	Office Review: J. Goering	
Species composition predominantly cedar with hemlock. Little spruce is present. Regeneration predominantly hemlock but includes some spruce. Muskeg incursions incorporated with mixed species; low volume timber in some areas. Some thin soil, poor soil drainage areas.			
Logging/Transportation	Field Review: B. Webster/ K. Martin/B. Wilkinson, 6/23/93	Office Review: M. Whitty	
Unit designed for running skyline. Lift trees will be needed for some yarding. Partial cut is not recommended due to lack of adequate suspension. Economics are fair. Unit is accessed by Road #3016700.			
Watershed/Fisheries	Field Review: M. Minnillo, 6/21/93	Office Review: T. Stewart	
Require 100' buffer on Class II stream on south unit boundary and flowing southwest from center of unit. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: M. Minnillo, 6/21/93	Office Review: T. Stewart	
No stability concerns noted. 25% to 30% slopes.			
Wildlife	Field Review: C. Confer, 6/21/93	Office Review: M. Hall	
No concerns. Level 1 structure retention. Goshawk survey conducted - no detections. High deer use. Sapsucker cavities identified.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not seen from any priority travel routes or use areas.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Class II streams implemented with 100' buffer. Remove hemlock and some cedar. Leave spruce and some cedar as seed trees. Due to lack of adequate suspension, seed trees may need to be left in small wedges adjacent to yarding corridors. Mitigation measures include: F4, F5, F6, F8, F10, W2, W10, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 418

QUAD : D3-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

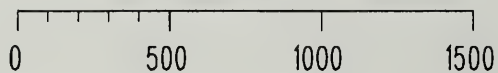
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



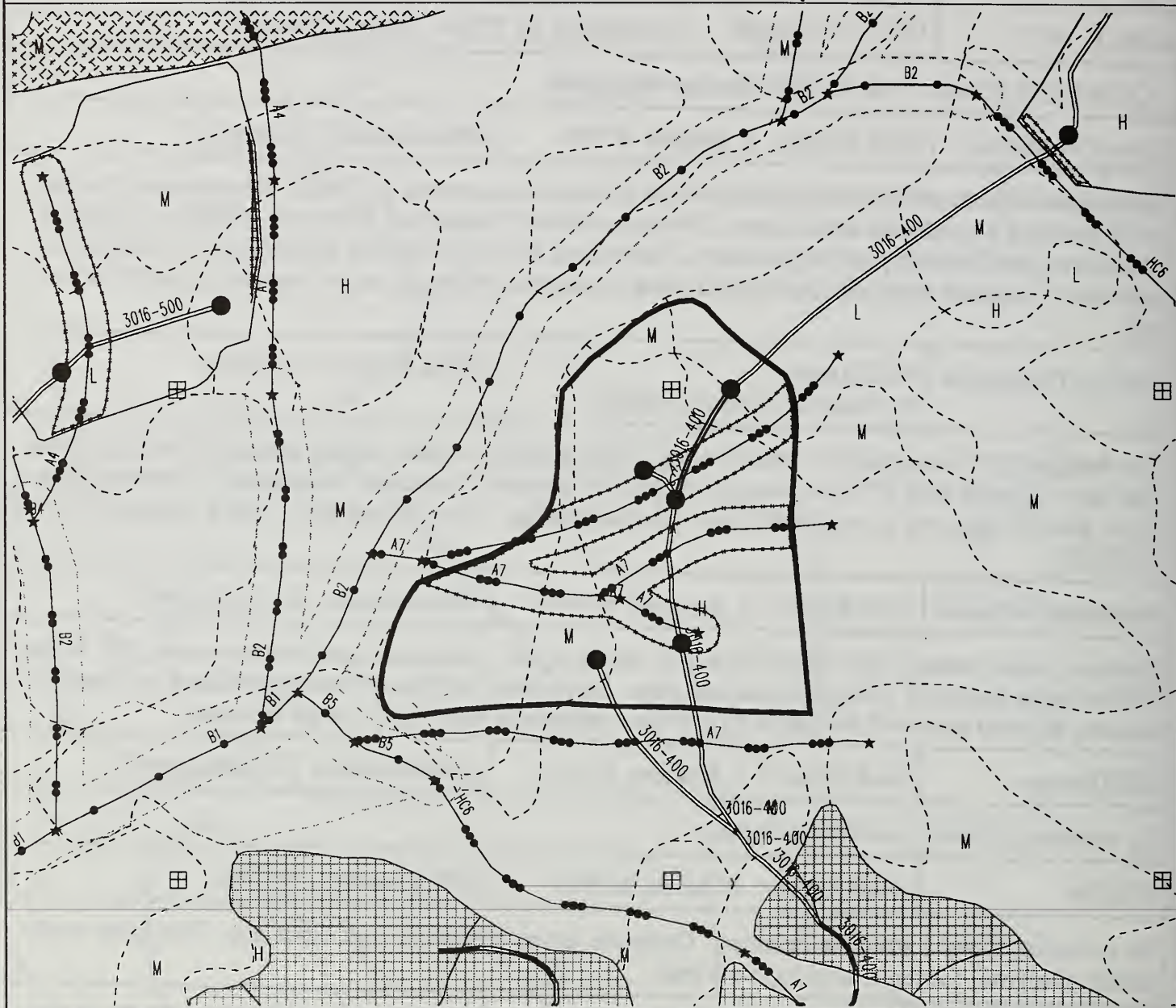
May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 418	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-115
ACRES: 44.9	VOL.: 1318 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within Honker Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 8/7/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock but includes some spruce. Dense understory vegetation. Moderate amounts of mistletoe infection evident in canopy and regeneration. Harvest all mistletoe infected hemlock and cut infected regeneration. Consider promoting spruce and cedar regeneration through partial retention or seed tree harvest.			
Logging/Transportation	Field Review: E. Urstadt/D. Keister, 6/26/93	Office Review: M Whitty	
Unit designed for running skyline cable system. Sixty percent is uphill yarding and partial cutting is possible here. A small strip of timber was left on the SW boundary because of blind leads. Blowdown potential on the NW edge can be minimized with a feathered edge. Good economics. Unit is accessed by Road #3016000.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/19/93	Office Review: G. McNaughton	
Southeast corner stream - 100' buffer plus 100' selective cut. Southwest corner stream needs 200' buffer. Buffer begins from 400' along side channel edge. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soil/Geology	Field Review: J. Knutzen, 6/19/93	Office Review: G. McNaughton	
No concerns, low slope, no slide potential.			
Wildlife	Field Review: H. Sloan, 6/19/93	Office Review: M. Hall	
No concerns. Level 1 structure retention. Goshawk survey conducted - no detections. Two hairy woodpecker observed. Contiguous old-growth tract.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Conduct seed tree harvest (Type F) on west setting. Partial cut not feasible in eastsetting - Type A. Retain co-dominant to intermediate spruce and cedar for leave trees. Cut all infected hemlock. Maintain buffers as indicated above. Mitigation measures for this unit are F5, F8, F10, W2, W5, W10, R1			

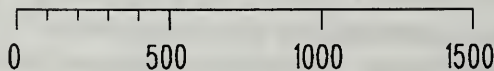
CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

QUAD : D3-SE



- ★ Channel Type Change

Scale in Feet



CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 419	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-116
ACRES: 43.2	VOL.: 351.4 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within the Honker Watershed.			
Timber/Vegetation	Field Review: J. Miller, 6/22/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar. Predominantly hemlock regeneration. Windthrow damage evident throughout the unit. Slope instability/failure potential existing.			
Logging/Transportation	Field Review: J. Estabrook/D. Goude/C. Giles, 6/21/93	Office Review: M. Whitty	
Unit is accessed by Road #3016400. Unit designed for Running Skyline harvest. Fifty percent is uphill logging. Partial cut is not practical due to steep slopes. Partial suspension required.			
Watershed/Fisheries	Field Review: R. Rogers 6/19/93	Office Review: G. McNaughton	
Northern-most Class IV stream does not require split yarding and is flagged green/white. Selective harvest buffers not required. The other two Class III streams (including tributaries) require slope break buffers (flagged orange/white). Selective harvest buffers maybe required. Assess during unit implementation.			
Soil/Geology	Field Review: R. Rogers 6/19/93	Office Review: G. McNaughton	
Recommend partial suspension yarding to protect thin, organic soils.			
Wildlife	Field Review: G. Green, 6/19/93	Office Review: C. Confer	
Moderate naturally fragmented habitat. Retain Level 1 structure retention. Goshawk survey conducted - no response.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not seen from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Implement slope break buffers on Class III streams per fisheries recommendations. Partial suspension required. Windthrow hazard limits opportunity for selective harvest. Type A clearcut. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F6, F7, F8, W1, W5, W10, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 420

QUAD : D3-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

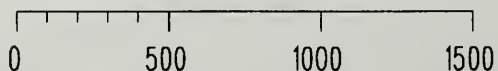
★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 420	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-116
ACRES: 57.9	VOL.: 553.4 MBF	LOGGING SYSTEM: Running Skyline, Helicopter	
LANDSCAPE ZONE: Unit within the Honker Watershed.			
Timber/Vegetation	Field Review: G. Hedin, 6/22/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Rock bluffs on the higher elevations of the unit. Steep slope, rocky, relatively thin soils, exposed rock and many wet drainage areas.			
Logging/Transportation	Field Review: B. Wilkinson/K. Martin/ B. Webster, 6/21/93	Office Review: J. Doyal/E. Urstadt	
Unit is accessed by an existing USFS road, 3016400. Unit designed for Running Skyline on lower 1/2 of unit. Visuals specialist require lowering boundary to 1000 feet. Upper 1/2 unit designated Helicopter yarding. Leaving unmerch buffer will minimize blowdown.			
Watershed/Fisheries	Field Review: R. Rogers, 6/19/93	Office Review: G. McNaughton	
No perennial streams in unit; no concerns.			
Soil/Geology	Field Review: R. Rogers, 6/19/93	Office Review: G. McNaughton	
Thin soils on extremely steep slopes - originally required partial suspension to minimize soil disturbance. However, partial suspension below 1,200' with helicopter logging above should minimize slope instability.			
Wildlife	Field Review: R. Rogers, 6/19/93	Office Review: M. Hall	
Retain Level 1 structure; no major wildlife concerns.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Retention VQO to be met.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Partial suspension required in lower portion of unit designated for Running Skyline. Conventional logging below 1,000' elevation in unseen area. Helicopter log above 1,000' meeting Retention VQO (Type I single tree/group selection). Type A clear-cut lower unit. Mitigation measures for this unit are as follows: F1, W2, W5, W10, V1, V2, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 424

QUAD : D3-SE

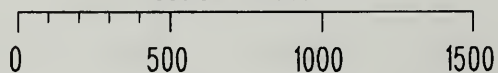


- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstroto
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

★ Channel Type Change

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 575	UNIT #: 424	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/1090-116
ACRES: 70.7	VOL.: 745.2 MBF	LOGGING SYSTEM: Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is within Honker Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 6/22/93	Office Review: J. Goering	
Species composition includes hemlock, spruce, and cedar. Regeneration predominantly hemlock but includes cedar and spruce.			
Logging/Transportation	Field Review: J. Spolar/ M. Whitty/J. Graves, 6/21/93	Office Review: M. Whitty	
This unit was originally accessed by Road #70-82-13 during initial unit layout. An IDT decision determined that this road could be eliminated (see Unit 575-425) and that this unit would best be accessed from an existing USFS road, #3016400. The harvest system designed for this unit is running skyline. Shovel logging may be possible in the SW portion.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/18/93	Office Review: G. McNaughton	
Four Class III streams in unit all require slope break buffers. In addition to the slope break buffer, selective cut in 100' V-notch area of stream 3 starting near southwest corner to Southwest edge to provide a reasonable assurance of wind firmness for this stream slope break buffer. The other 3 streams don't require selective harvest buffers.			
Soil/Geology	Field Review: J. Knutzen, 6/18/93	Office Review: G. McNaughton	
No concerns. Moderate slopes with good stability			
Wildlife	Field Review: H. Sloan, 6/18/93	Office Review: M. Hall	
No concerns. Level 1 structure retention. Goshawk survey conducted - no detections. Audible woodpecker detection. Contiguous old-growth tract.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Not seen from Honker Canoe Route.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Road as laid out in field (82-70-13) can be eliminated for this unit and Unit 575-425. Shovel log off existing road on south and west part of unit. Spur off main road to swing yard upper part. Implement Fisheries stream recommendations. Type A clearcut. Mitigation measures for this unit are as follows: F5, 57, 58, W1, W4, W10, V1, V2, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 575

UNIT : 425

QUAD : D3-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

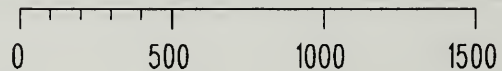
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

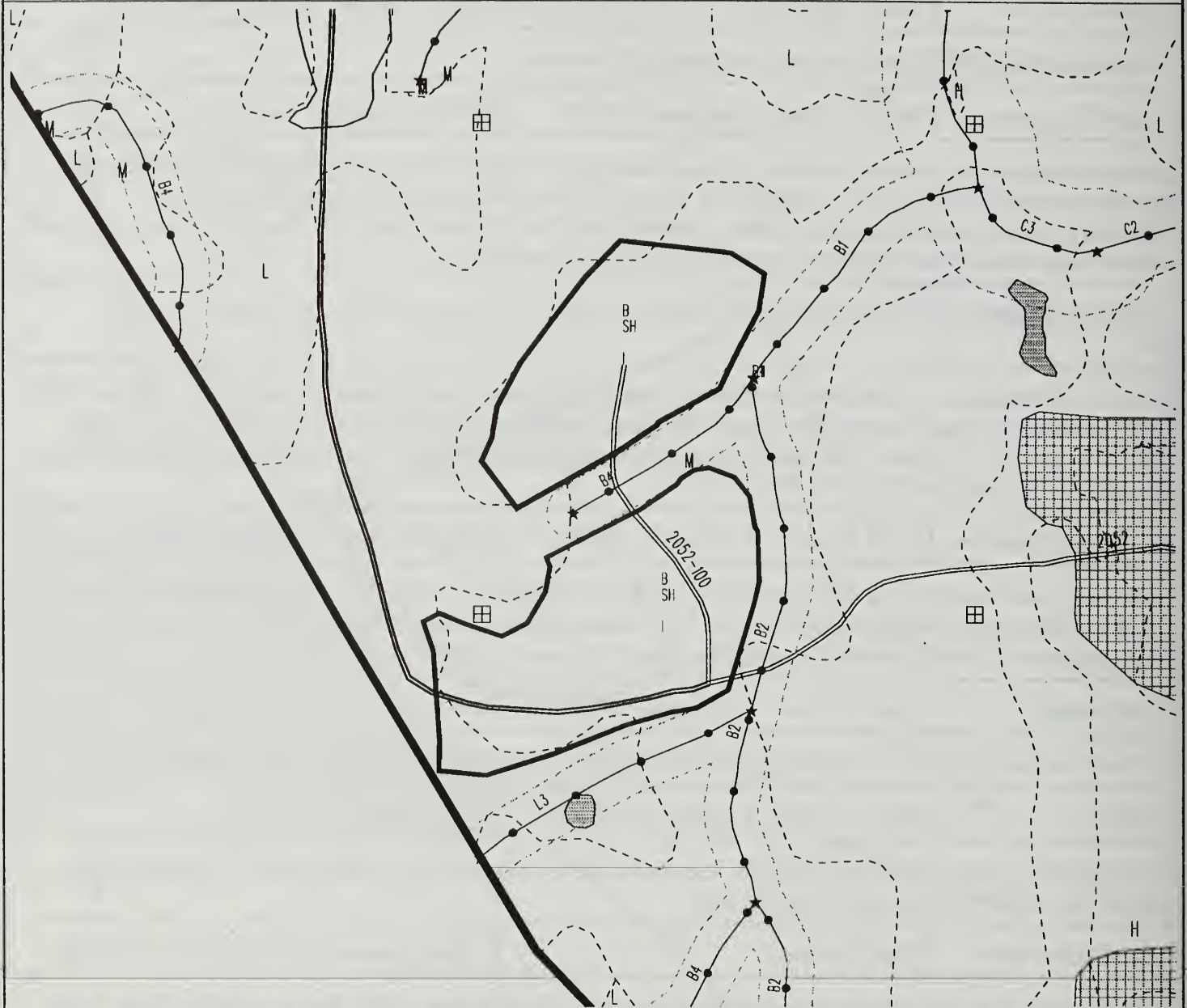
VCU #: 575	UNIT #: 425	QUARTER QUAD: D3-SE	PHOTO YR/#: 1991/1090-116
ACRES: 47.3	VOL.: 786.9 MBF	LOGGING SYSTEM: Running Skyline, Helicopter	
LANDSCAPE ZONE: Unit is within the Honker Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 6/26/93	Office Review: J. Goering	
Species composition includes hemlock, spruce, and cedar. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Windthrow damage evident throughout the unit. Slight slope instability/failure potential existing. Steep relatively shallow soils, and poor soil drainage areas. Good advanced regeneration (candidate for release) consisting of hemlock.			
Logging/Transportation	Field Review: M. Whitty/J. Graves	Office Review: E. Urstadt	
This unit is designed as a helicopter partial cut in the upper portion of the unit (to maintain retention VQO in the remaining visual concern area), and a Running Skyline system to harvest the lower, non-visually sensitive portion of the unit. The unit is accessed from Road #3016400. Verify roads and logging system during final layout. See Unit 575-424.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/18/93	Office Review: G. McNaughton	
Selectively cut V-notch area of stream along north unit boundary to minimize soil disturbance. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness. Implement selective harvest buffers as required.			
Soil/Geology	Field Review: J. Knutzen, 6/18/93	Office Review: G. McNaughton	
Partially suspend required to minimize soil disturbance. Soils highly saturated, signs of fallen trees.			
Wildlife	Field Review: J. Knutzen, 6/18/93	Office Review: M. Hall	
No concerns. Level 1 structure retention. Goshawk survey conducted - no detections. Wetlands below unit to the southwest had Canada goose scat.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Keep below 1,100' due to visibility from Twin and Thorne Lakes. Retention VQO above 1,100'. Maximum Modification below 1,100'. Retention VQO to be met.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Unit redesigned to yard timber to southwest of original layout. This logging systems design will avoid seen area completely. Partial suspension required. Type B clearcut (setting B) recommended. Split yard Class III stream buffer. Helicopter log above 1,000' elevation meeting retention VQO (Type I single tree/group selection). Mitigation measures for this unit are as follows: F1, F5, F7, F8, W2, W4, W10, V1, V2, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 577

UNIT : 416

QUAD : D4-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

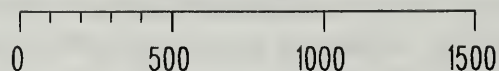
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

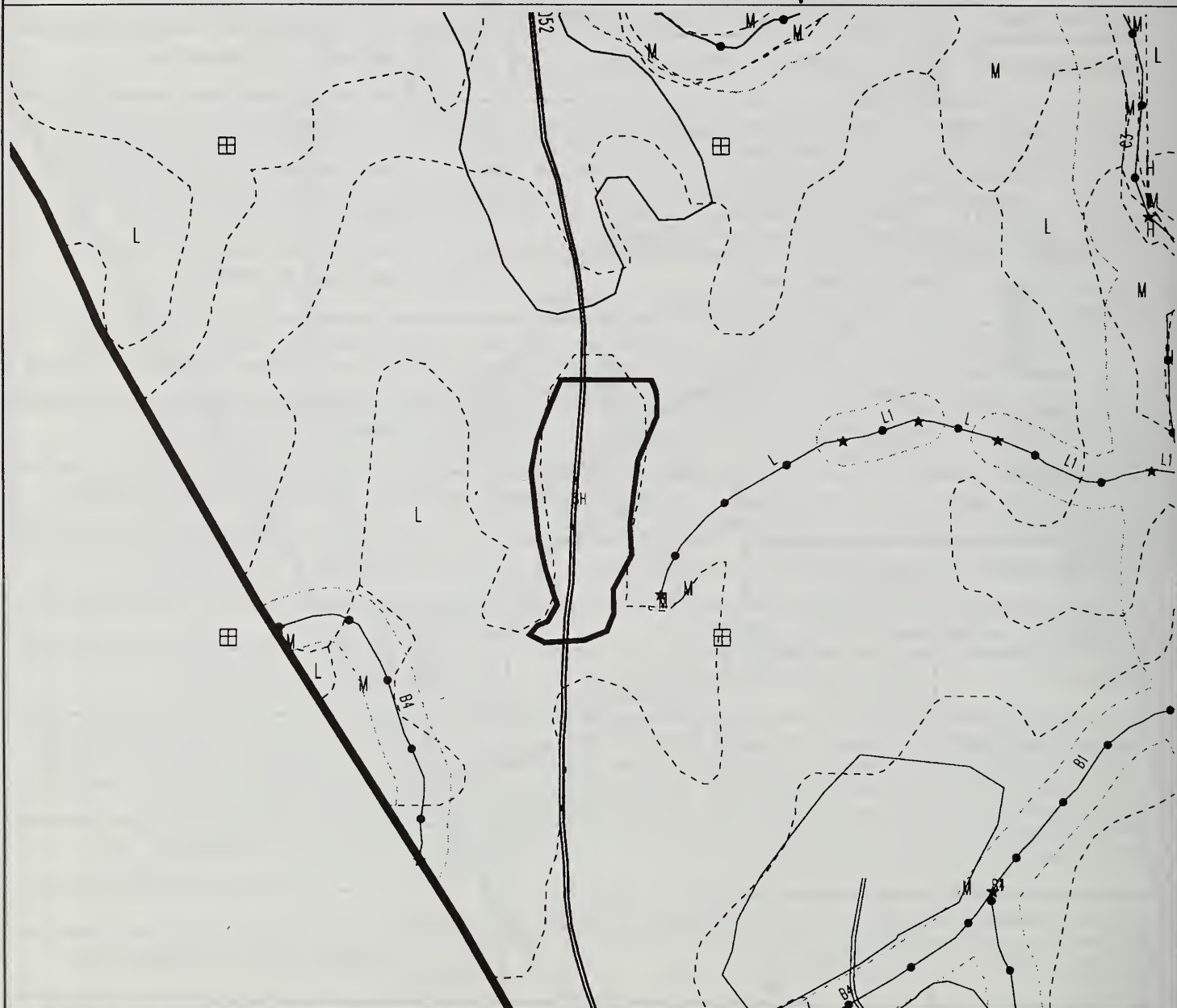
VCU #: 577	UNIT #: 416	QUARTER QUAD: D4SE	PHOTO YR/#: 1991/1190-56
ACRES: 38.3	VOL.: 938.6 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is within proposed Goshawk PFA.			
Timber/Vegetation	Field Review: B. Hasebe, 7/27/93	Office Review: J. Goering	
Species composition predominantly hemlock and a few spruce. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Fairly dense understory vegetation. Light amount of mistletoe infection evident in the canopy of the eastern boundary. Regeneration concerns due to low site index soils in the western portion. Consider partial retention/seedtree harvest to promote regenerative success and desirable species composition on western edge.			
Logging/Transportation	Field Review: T. Wetzel/G. Slawson, 7/26/93	Office Review: K. Martin	
Unit is accessed by Road #2052200. Recommend shovel logging entire unit. Partial cut is possible. The south and east boundaries have a 100 foot stream buffer. South end of unit was dropped due to buffers. Good economics.			
Watershed/Fisheries	Field Review: B. Romey, 7/27/93	Office Review: T. Stewart	
Streams 1, 2, and 3 are all Class I, B/W, 100' TTRA buffers. Stream 2 only extends 3/4 of the way into unit before ending.			
Soils/Geology	Field Review: M. Metzler, 7/22/93	Office Review: T. Stewart	
Low slopes, no evidence of instability.			
Wildlife	Field Review: M. Metzler, 7/22/93	Office Review: M. Hall	
Recommend extending Class I stream buffer in center of unit through to the west side of unit in order to leave a contiguous corridor through unit for deer travel. Other structure to be retained along unit boundary and around beaver ponds in south end of unit. Retain Level 2 structure due to adjacency to heavily harvested areas.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Maintain 100' no-harvest buffer on Class I stream that bisects unit and on south and east side of unit. Maintain structure by Type E overstory removal of all trees 17" DBH and larger selecting for occasional smaller hemlocks along eastern portion of unit if heavily mistletoed. Small Class I lake south of the unit should receive a 100' no-cut plus a 400' selective cut buffer. Mitigation measures for this unit are as follows: F5, F8, F10, W1, W2, W10, R1			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 577

UNIT : 417

QUAD : D4-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstroto
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

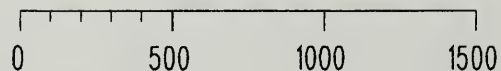
● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Chonnel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

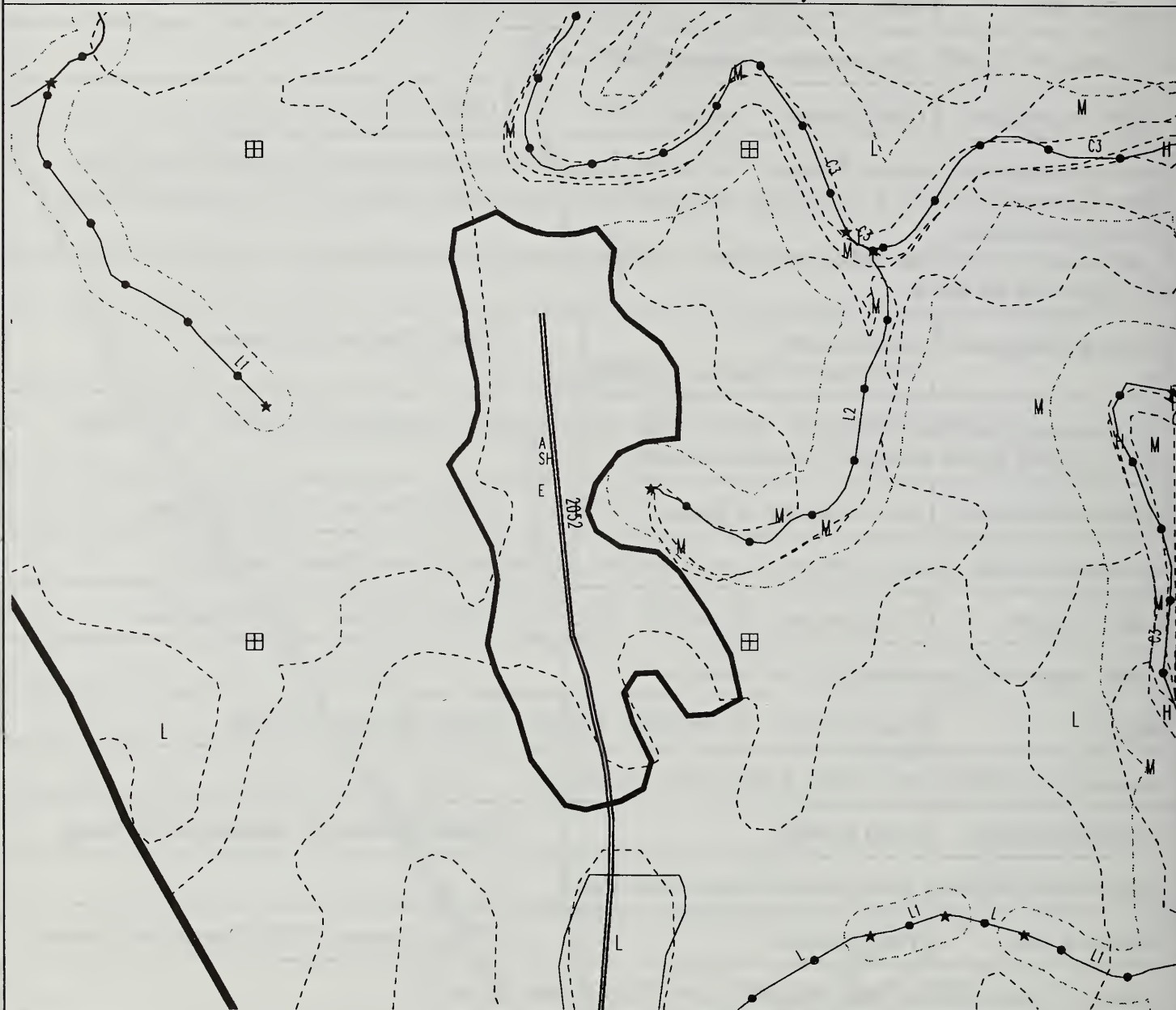
VCU #: 577	UNIT #: 417	QUARTER QUAD: D4SE	PHOTO YR/#: 1991/1190-56
ACRES: 8.9	VOL.: 122.7 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is within proposed Goshawk PFA.			
Timber/Vegetation	Field Review: J. Miller, 8/2/94	Office Review: J. Goering	
<p>Species composition includes hemlock, and cedar. Regeneration predominantly hemlock but includes some unacceptable cedar. Low volume, multi-species, multi-canopy stand with < 50% canopy closure & low site productivity.</p> <p>Light amount of mistletoe infection evident in canopy. Analyze for feasibility given the low site index and low volume of the stand.</p>			
Logging/Transportation	Field Review: T. Wetzel/G. Slawson, 7/29/93	Office Review: K. Martin	
Unit is accessed by Road #2052200. Recommend shovel yarding. Partial cut is possible. A 200 foot buffer is along the SE boundary. Good economics.			
Watershed/Fisheries	Field Review: B. Romey, 7/22/93	Office Review: G. McNaughton	
No streams in unit. Eastern portion of unit is selective harvest only due to Class I lake buffer.			
Soils/Geology	Field Review: M. Minnillo, 7/22/93	Office Review: G. McNaughton	
Gentle slopes with good stability. No concerns.			
Wildlife	Field Review: M. Minnillo, 7/22/93	Office Review: M. Hall	
Generally low animal use in unit. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations		Reviewed By:	
<p>Unit (8.9 acres) mostly surrounded by muskeg with some existing structure along narrow Class I lake southwest of unit (10 - 40 MBF). Maintain some structure by using Type I group selection of 16" DBH trees, selecting mistletoed hemlocks if possible. Mitigation measures for this unit are as follows: F4, F5, F8, F10, W2, W10, R1.</p>			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 577

UNIT : 418

QUAD : D4-SE



- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

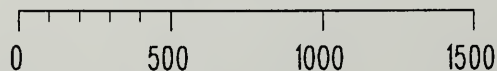
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 577	UNIT #: 418	QUARTER QUAD: D4SE	PHOTO YR/#: 1991/1190-57
ACRES: 36.2	VOL.: 806.3 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is located at south end of proposed Goshawk PFA.			
Timber/Vegetation	Field Review: J. Miller, 7/31/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock but includes 5% cedar and 5% spruce. Low volume, multi-species, multi-canopy stand with < 50% canopy closure, and mapped as low site productivity. Low to moderate amounts of mistletoe infection evident in canopy. Minimize soil compaction and promote spruce/cedar regeneration through partial retention or planting. Occasional very large trees in unit.			
Logging/Transportation	Field Review: T. Wetzel/G. Slawson, 7/29/93	Office Review: K. Martin	
Unit is accessed by Road #205200. Shovel log entire unit. A 200 foot stream buffer is to north and a 150 foot buffer is on east side. Good economics. Partial cut is possible.			
Watershed/Fishes	Field Review: B. Romey, 7/22/93	Office Review: T. Stewart	
Stream at north unit boundary is a Class I, B/W, 200' TTRA buffer. Stream east of unit is a Class I, B/W, 150' TTRA buffer.			
Soils/Geology	Field Review: M. Minnillo, 7/22/93	Office Review: T. Stewart	
Low, slightly rolling, slopes; predominantly dry site. No stability concerns.			
Wildlife	Field Review: M. Minnillo, 7/22/93	Office Review: M. Hall	
Model Goshawk habitat. Recommend follow-up survey. Low wildlife sign. Low forage except along stream. Class I stream on north of unit and along west side of unit on muskeg. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review: J. Wilmot, 8/17/93	Office Review: T.W. Greiser	
Cultural - Unit partially or completely within high probability area for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Stream at north end requires a 200' buffer. Stream 2 to the east requires a 150' buffer. Goshawk radio location in the vicinity. Goshawk nest identified to the north. A follow-up survey should be conducted. Maintain structure by using Type E overstory removal taking 18" DBH and larger and other small hemlock if infected with mistletoe. Retain large cedar and spruce along road for possible small sale/specialty wood opportunity. Mitigation measures are as follows: F5, F8, F10, W2, W9, W10, W11, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 577

UNIT : 423

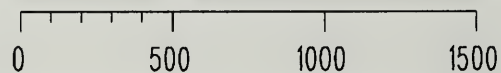
QUAD : D4-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

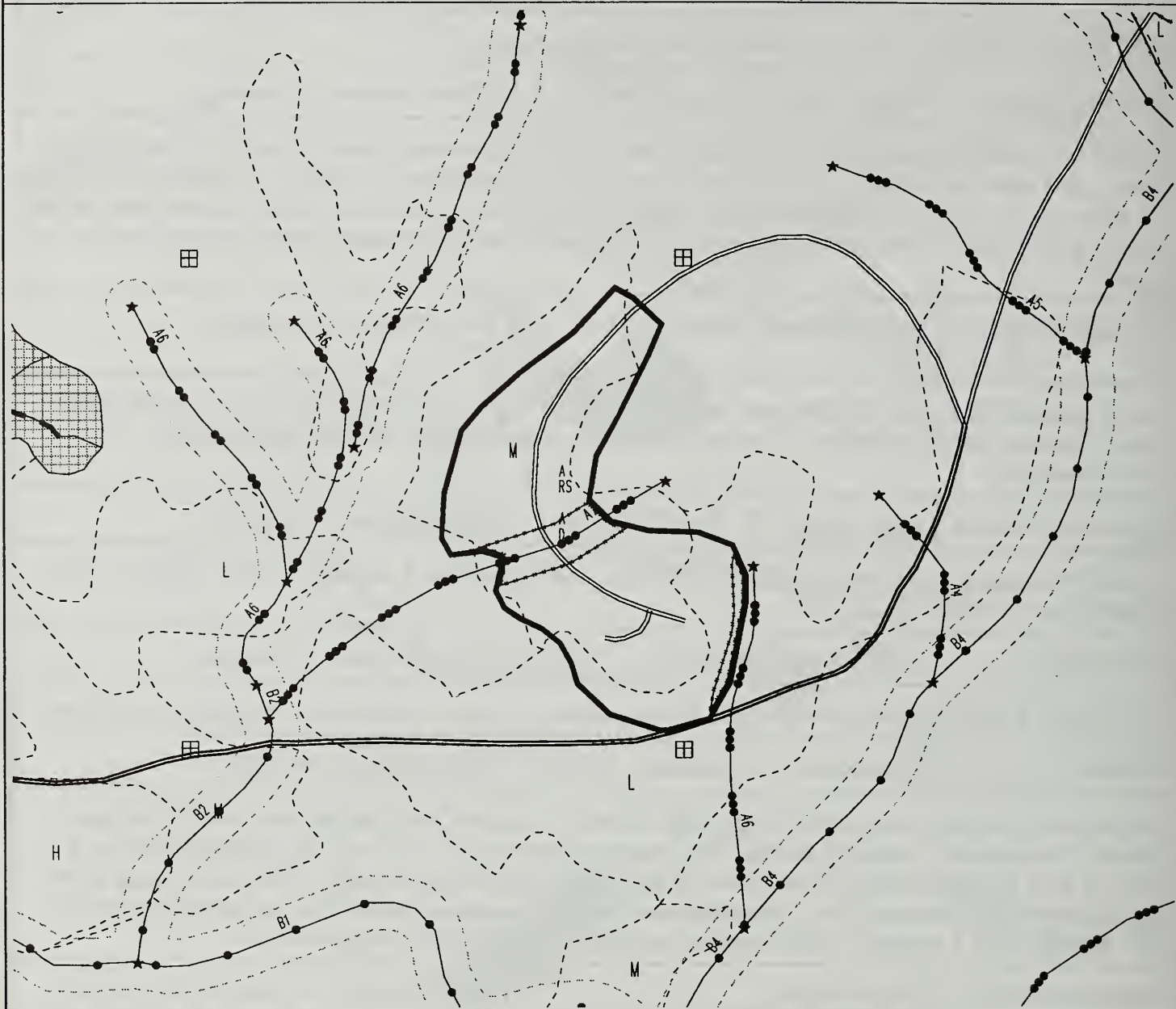
VCU #: 577	UNIT #: 423	QUARTER QUAD: D4SE	PHOTO YR/#: 1991/1190-59
ACRES: 34.8	VOL.: 955.5 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is in Goshawk Post-Fledging Area.			
Timber/Vegetation	Field Review: M. Case, 7/30/93	Office Review: J. Goering	
Species composition includes hemlock, spruce, and cedar. Regeneration predominantly hemlock but includes a few cedar and spruce. Good advanced regeneration (candidate for release) consisting of hemlock and spruce in the north and eastern portions. Stand surrounded by ponds and streams. Beaver pond to the northwest of the unit. River present to the west. Possible riparian soils present in the northwest portion of the unit.			
Logging/Transportation	Field Review: K. Martin/B. Flatz, 7/31/93	Office Review: K. Martin	
Unit is accessed by Road #3035246 and two spurs. Shovel log entire unit. Partial cut is feasible. Blow-down is possible in TTRA buffers. The unit is virtually surrounded by 100 foot stream buffers. Very good economics.			
Watershed/Fisheries	Field Review: B. Romey, 7/23/93	Office Review: J. Knutzen	
Streams on north and west need 100' TTRA buffers. Lake is a Class 1 lake and needs a 100' plus 400' selective harvest buffer.			
Soils/Geology	Field Review: M. Minnillo, 7/23/93	Office Review: J. Knutzen	
Low slopes. Portions of unit are wet slope, but no notches or signs of instability. Windthrow is minimal.			
Wildlife	Field Review: M. Minnillo, 7/23/93	Office Review: M. Hall	
Recommend bald eagle nest survey along Class I stream (Logjam Creek) on the west side of unit prior to harvest. Some quality Goshawk habitat. Recommend survey prior to harvest. Recommend leaving a patch of trees in west central portion of unit in the split of proposed spur roads. Many large snags in this area and moderate deer/bear sign. Structures will be left around unit boundary in stream and lake buffers. Retain Level 1 structure. Unit is within preliminarily designated Goshawk PFA.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review: D. Putnam, 7/31/93	Office Review: T.W. Greiser	
Cultural - Unit partially or completely within high probability area for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Original unit split in two to meet Goshawk PFA Guidelines (new unit is 577-437, deferred for this entry). Recommend bald eagle survey along Logjam Creek. Maintain 100' buffers from streams and lake edges. 400' selective harvest buffers required around lake removes most merchantable timber from harvest. Type I for selective harvest. Type A in remainder of unit. New south unit boundary will need to be flagged during final layout. Mitigation measures for this unit are as follows: F4, F5, F8, F10, W2, W5, W8, W9, W10, W11, R1.			










CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD







VCU : 577




UNIT : 426

QUAD : D3-SW



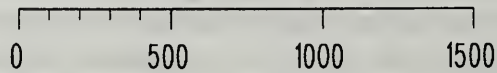
-  Revised Control Lake Project Boundary
 Post-Field Unit Boundary w/ Setting Codes
 Other Post-Field Unit Boundaries
 USFS Timber - Volstroto
 Eagle Tree Buffer of 330ft
 Existing & Rebuilt Roads
 F.S. Roads Under Construction
 Post-Field Proposed Roads
 Class 3 Treatment Zone

-  Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41
 Landings
 Stream & Lake NoCUT Buffers

-  Ahmu-Class 1 & Stream Chontypes
 Ahmu-Class 2 & Stream Chontypes
 Ahmu-Class 3 & Stream Chontypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 577	UNIT #: 426	QUARTER QUAD: D3SW	PHOTO YR/#: 1991/990-49
ACRES: 25.7	VOL.: 298.5 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within Goshawk PFA Corridor.			
Timber/Vegetation	Field Review: S. Karstens, 8/10/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock but includes spruce. Low to moderate amounts of mistletoe infection evident in canopy and advanced regeneration. A few rock bluffs on the higher elevations of the unit. Salmonberry present in the southern portion of the unit associated with the stream. Poor soil drainage in the southern portion of the unit. Harvest all mistletoe infected hemlock and cut infected regeneration.			
Logging/Transportation	Field Review: T. Wetzel/D. Foster, 8/09/93	Office Review: E. Ustadt	
Unit designed for Running Skyline. Seventy percent uphill yarding. Partial suspension is possible on the north part of unit. A blind lead area on the SW boundary was excluded (wildlife area). Verify stream class on SE unit boundary during final layout. Unit is accessed by Road #2052200.			
Watershed/Fisheries	Field Review: B. Romey, 7/30/93	Office Review: T. Stewart	
Stream in center of unit is a Class III, O/W, split yard, directional fall away from slope break buffer. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness. No selective harvest buffers are required.			
Soils/Geology	Field Review: M. Minnillo, 7/30/93	Office Review: T. Stewart	
Low to moderate slopes. Follow fisheries split yard requirement on Class III notch. No other concerns.			
Wildlife	Field Review: M. Minnillo, 7/30/93	Office Review: M. Hall	
Recommend no harvest; high use deer/bear habitat (above 700') on knob at top of unit. Retain Level 1 structure. Woodpeckers heard and observed.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations		Reviewed By:	
Directionally fall and split yard Class III stream buffer in unit and on southeast side. Use caution around small pond on southeast corner of unit. Type A clearcut. Partial cutting not attractive due to blowdown potential and mistletoe infection in advanced regeneration. Three- to four-acre blind lead left in southwest corner of unit. Type D. Mitigation measures for this unit are as follows: F1, F5, F6, F7, F8, W1, W5, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 577

UNIT : 430

QUAD : D3-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

May 07, 1998

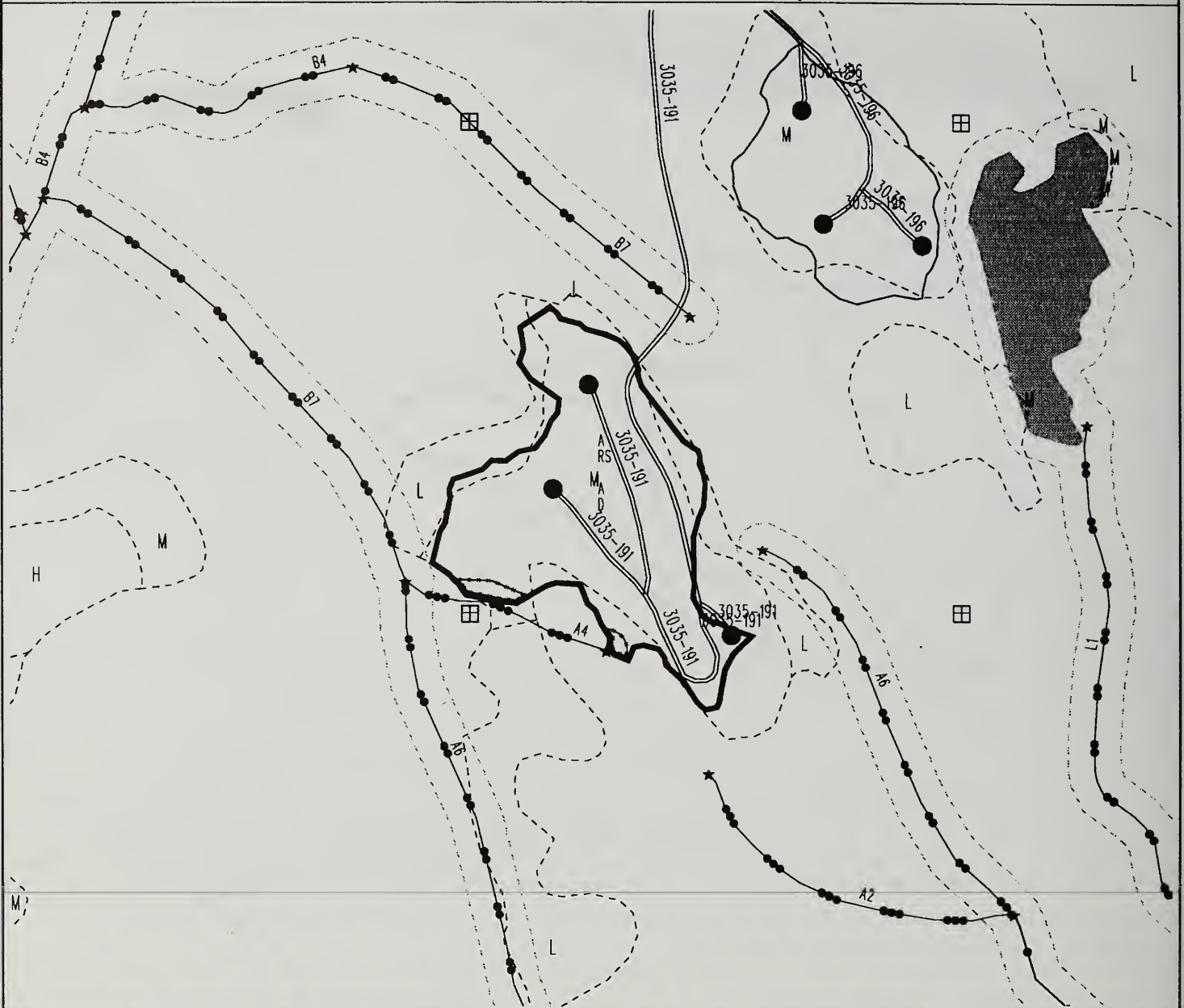
Unit dropped or deferred

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 577

UNIT : 431

QUAD : D3-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes

★ Channel Type Change

April 21, 1998

Scale in Feet
0 500 1000 1500

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 577	UNIT #: 431	QUARTER QUAD: D3SW	PHOTO YR/#: 1991/890-116
ACRES: 22	VOL.: 416.5 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is located northwest of, but not in proposed Honker Block.			
Timber/Vegetation	Field Review: T. Stecher, 8/25/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes 20% cedar and 7% spruce. Regeneration mostly on nurse logs and consists of hemlock, spruce and a few cedar. Moderate-low volume, mixed species, multi-canopy stand with < 50% canopy closure and relatively low site productivity. Fairly poor soil drainage areas present. Poor regeneration and non-vigorous or decaying trees in the west-central portion due to poor soil drainage. Recommend cable yarding to minimize soil compaction. Exclude west-central portion from harvest. Mapped low site index soil not observed.			
Logging/Transportation	Field Review: K. Martin/B. Flatz/D. Keister, 8/26/93	Office Review: K. Jehnke	
Unit is accessed by Road #3035191. Another road was flagged from SW (Road #69-81-34). This road was abandoned due to slides and unstable soils. Swing yard unit using running skyline. Spurs have not been flagged in field. Southern portion of unit was eliminated due to lack of merchantable timber. Fair economics.			
Watershed/Fisheries	Field Review: M. Minnillo, 8/10/93	Office Review: T. Stewart	
Streams mapped to the northeast, southeast and south-central are muskeg drainages. Stream on west side of unit is Class III muskeg channel. Class III in west-central unit is also muskeg channel. No concern.			
Soils/Geology	Field Review: M. Minnillo, 8/10/93	Office Review: T. Stewart	
Southeast corner at unit need to be adjusted to avoid steep slopes. West boundary to be maintained above muskegs and wet slopes. Recommend deleting southern half of unit due to moderate steep and wet slopes. Partial suspension required in south half of unit if not deleted.			
Wildlife	Field Review: M. Minnillo, 8/10/93	Office Review: M. Hall	
Recommend a 150' select harvest prescription along west unit boundary along muskeg in order to leave some cover for deer/bear since Unit 577-432 is directly across muskeg. Recommend using road at west unit boundary in south half of unit to maintain cover along riparian corridor west of unit. Moderate deer use in unit; good cover/forage. Muskeg on east side of unit is heavily traveled by deer/bear/wolves - recommend 150' select harvest along this muskeg. Retain Level 2 structure due to large area of natural fragmentation and harvest in matrix			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Avoid Class II channels to north and east (not in unit). Unstable part of unit excluded. Partial suspension not required. Type A clearcut and Type D with leave island in west-central poor regeneration area. Mitigation measures for this unit are as follows: F1, F4,F5,F8,F10,W1,W5,W10,W12, R1.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 577

UNIT : 432

QUAD : D3-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

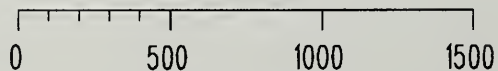
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 577	UNIT #: 432	QUARTER QUAD: D3SW	PHOTO YR/#: 1991/890-116
ACRES: 13	VOL.: 216.6 MBF	LOGGING SYSTEM: Swingyard/Running Skyline	
LANDSCAPE ZONE: Unit is northwest of proposed Honker Divide HCA.			
Timber/Vegetation	Field Review: J. Miller, 8/18/93	Office Review: J. Goering	
Species composition predominantly hemlock with cedar but a few spruce are present. Regeneration predominantly hemlock but includes a few spruce, and cedar in the northern section. Alaska yellow cedar decline evident on the southern slopes. Fair to poorly drained soils in areas of the southern half in proximity of the lake. Stand appears windfirm and feasible for partial retention harvests. Promote spruce and cedar regeneration through shelterwood or seed tree harvest.			
Logging/Transportation	Field Review: E. Urstadt/J. Herzberg, 8/18/93	Office Review: K. Jehnke	
Unit is accessed by Road #3035191. Two spurs are in unit. This unit can be partial cut. Verify suspension in SE corner during final layout with profiles. Tailholds will be needed (on the south line). Tie-backs or an equipment anchor should work. There is a 100 foot buffer on the SE boundary. The south half of the unit was dropped due to low volume and very poor economics. Fair economics for the remainder of the unit. Partial suspension is possible.			
Watershed/Fisheries	Field Review: J. Metzler, 8/10/93	Office Review: T. Stewart	
A Class IIa lake, approximately 15 acres, is located east of the unit. It requires a 100' no-cut buffer. There are no streams in the unit.			
Soils/Geology	Field Review: J. Metzler, 8/10/93	Office Review: T. Stewart	
Slopes are 50% to 70% and there is some evidence of soil creep and a small slump in the unit. Partial suspension should be achieved throughout the unit.			
Wildlife	Field Review: M. Minnillo, 8/10/93	Office Review: M. Hall	
Recommend deleting the southern half of unit due to proximity to high use large muskeg habitat and Unit 577-431. Snags will be retained along lake buffer. Low wildlife sign in unit. Active beaver pond to east of unit. High goose sign along pond on east of unit. Structure will be maintained in lake buffer. Muskeg is high use deer/bear/wolf habitat. Retain Level 2 structure due to matrix of natural fragmentation.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Southern portion of original unit excluded due to non-CFL. Lake to east requires 100' no-cut buffer. Type E overstory removal - remove 17" and greater diameter trees. Leave smaller cedar to encourage regeneration. Many large spruce trees provide opportunity for small independent sale. Achieve partial suspension over entire unit. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F6, F8, W2, W10, W11, W12, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 578

UNIT : 401

QUAD : D3-SE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chatypes
- Ahmu-Class 2 & Stream Chatypes
- Ahmu-Class 3 & Stream Chatypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet
0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 578	UNIT #: 401	QUARTER QUAD: D3SE	PHOTO YR/#: 1991/990-169
ACRES: 82.0	VOL: 2180.2 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is located in the Honker Block and within the second 1/4 mile of the Thorne River scenic corridor.			
Timber/Vegetation	Field Review: T. Stecher 6/29/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar but a few spruce are present. Predominantly hemlock regeneration. Sparse spruce and western red cedar regeneration. Moderate to high amounts of mistletoe infection evident in canopy throughout the unit.</p> <p>Riparian soils present in areas in the northern half of the unit. Fairly dense understory vegetation in the southeast portion near the lake. Harvest all mistletoe infected hemlock and plant spruce and cedar in these areas. Excluded 3-4 acres in northeastern portion of unit. Minimize soil compaction especially in poor soil drainage areas.</p>			
Logging/Transportation	Field Review: J. Doyal/D. Keister/J. Herzberg, 7/01/93	Office Review: K. Jehnke	
Unit is accessed by Road #3015400 and is designed as a continuous landing for shovel yarding. The S and SE unit boundaries have 100 foot muskeg buffers.			
Watershed/Fisheries	Field Review: C. Confer, 6/25/93	Office Review: T. Stewart	
Class I, flagged B/W implemented with 100' buffer from edge of muskeg (flood plan area) buffer. Riparian soils avoided. Lake along southeast end of unit protected with 150' no harvest buffer and a 400' selective harvest.			
Soils/Geology	Field Review: H. Sloan/ C. Confer, 6/25/93	Office Review: T. Stewart	
No concerns.			
Wildlife	Field Review: H. Sloan/ C. Confer, 6/25/93	Office Review: M. Hall	
Maintain floodplain system. Level 1 structure. Goshawk survey conducted - no detections. Murrelet survey conducted - presence observed. Sandhill cranes audible. Beaver, bear, and deer use evident. Avoid disturbance of wintering trumpeter swans by implementing current Forest standards and guidelines.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Consider partial retention or shelterwood harvest in areas next to the lake and beaver ponds. Highly visible from major arterial road. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			

Interdisciplinary Team Recommendations	
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Class I streams on west and east side require 100' buffers. No selective harvest buffers are required. Lake requires 150' no-cut buffers and 400' selective harvest. Selective lake buffer harvest should be group selection (Type I). Type G shelterwood in main unit. Mitigation measures for this unit are as follows: F4, F5, F8, F10, W2, W10, W11, R1.

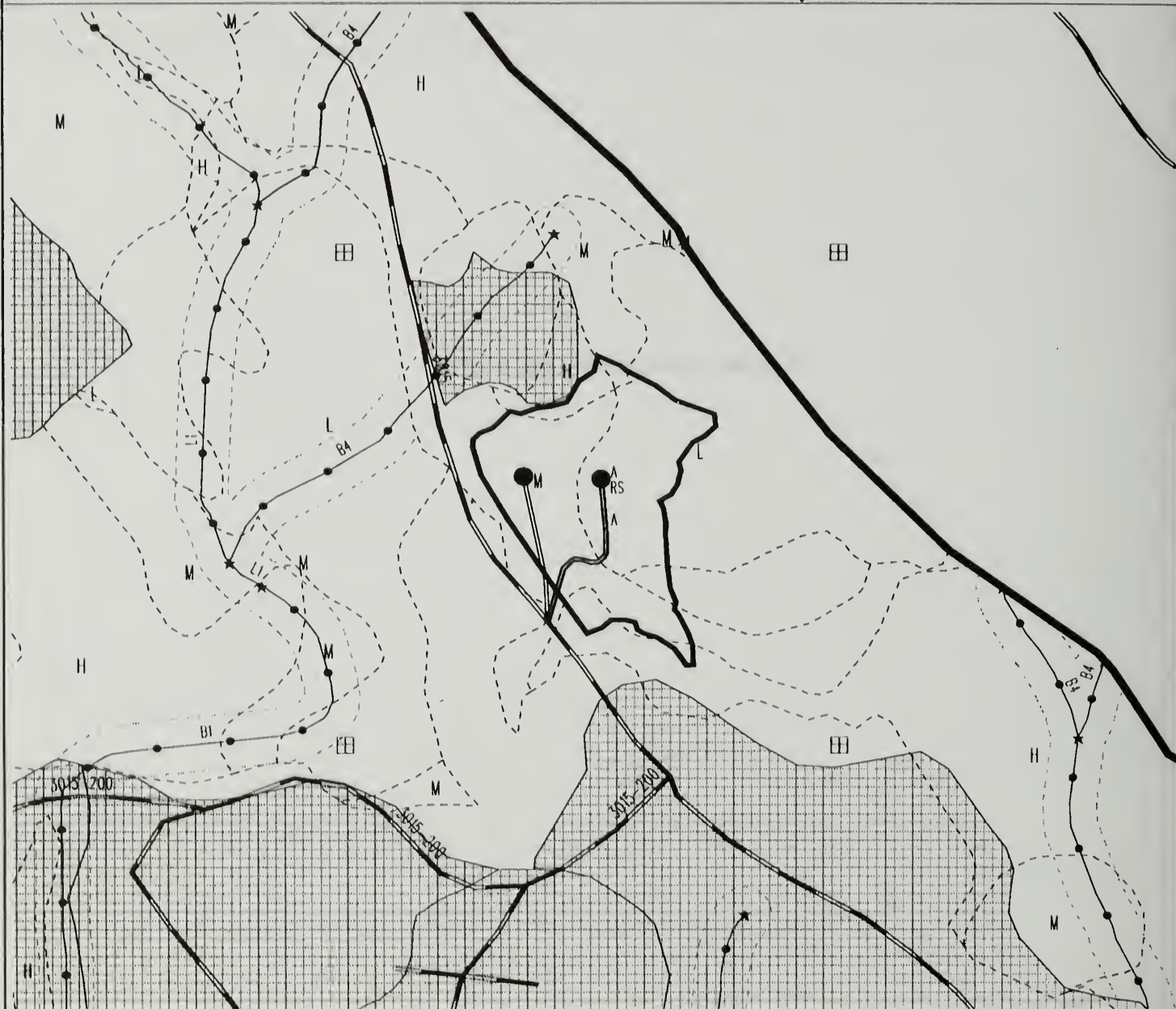
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 578

UNIT : 403

QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

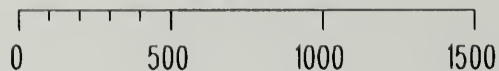
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

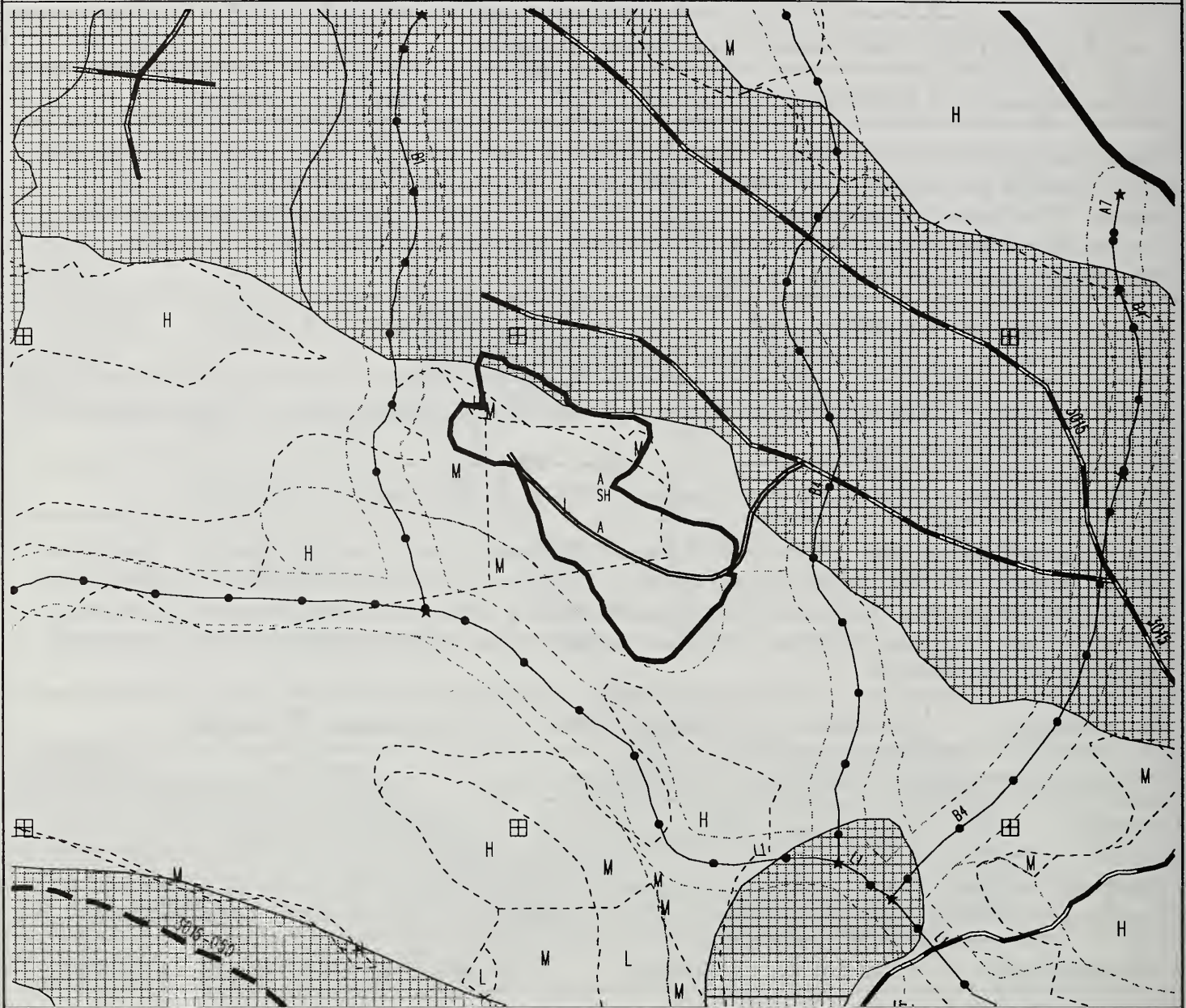
VCU #: 578	UNIT #: 403	QUARTER QUAD: C2NW	PHOTO YR/#: 1991/690-37
ACRES: 15.0	VOL.: 374.5 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is located in the Honker Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 7/13/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock but includes a few spruce. Moderate to high amounts of mistletoe infection evident in canopy. Windthrow potential minimal. Running Skyline recommended to minimize soil compaction. Harvest all mistletoe infected hemlock and cut infected regeneration. Promote spruce and cedar regeneration through shelterwood or seed tree harvest.			
Logging/Transportation	Field Review: E. Urstadt/J. Spolar, 7/01/93	Office Review: K. Jehnke	
Unit is accessed by USFS Road #3015. Harvest unit with Running Skyline system. Partial suspension is possible. Partial cut is possible.			
Watershed/Fisheries	Field Review: S. Tanguay, 6/28/93	Office Review: T. Stewart	
One stream adjacent to unit - enters off 3015 road in northwest of unit. One trout observed. Mapped as Class I, flagged B/W 100' buffer for approximately 250' from 3015 to fork in channel. No selective harvest buffers are required. Flagged O/W from fork to muskeg (adjacent to unit); implement slope break buffer on Class III streams (if stream within unit), adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: S. Tanguay, 6/28/93	Office Review: T. Stewart	
No soils concerns noted in field check. Low to moderate slopes.			
Wildlife	Field Review: S. Tanguay, 6/28/93	Office Review: M. Hall	
Bring unit boundary to edge of scrubby timber surrounding muskeg to northeast of unit. Close road following entry. Woodpecker(s) audible in unit. Fairly contiguous old-growth; retain Level I structure.			
Visual/Recreation	Field Review: S. Bedross	Office Review: S. Bedross, M. Greenig	
Modified landscape. Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Original boundary to north modified to reflect updated second growth layer. No streams are within unit as implemented. Type A clear-cut - yard away from road #3015. Mitigation measures for this unit are as follows: F4, F8, W5, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 578

UNIT : 404

QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

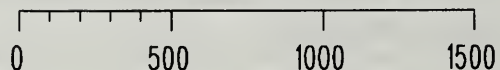
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

April 21, 1998

Scale in Feet



CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 578	UNIT #: 404	QUARTER QUAD: C2NW	PHOTO YR/#: 1991/690-35
ACRES: 14.0	VOL.: 271.3 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is in the Honker Watershed and Honker Block.			
Timber/Vegetation	Field Review: T. Stecher, 7/13/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Predominantly hemlock regeneration. Low to moderate amounts of mistletoe infection evident in canopy. Promote spruce regeneration through seed tree harvest or promote spruce/cedar regeneration through planting. Harvest all mistletoe infected hemlock and cut infected regeneration.			
Logging/Transportation	Field Review: S. Field/T. Wetzel, 8/30/93	Office Review: J. Doyal	
Unit is accessed by Road #3015050. Shovel log entire unit. Partial cut is possible. A 200 foot floodplain buffer is on the SW edge.			
Watershed/Fisheries	Field Review: B. Romey, 7/08/93	Office Review: T. Stewart	
100' buffer required (TTRA) on Streams 1 (southeast side of unit) and 2 (on west side of unit). 100' additional selective harvest buffer on both Stream 1 and Stream 2. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: M. Minnillo, 7/08/93	Office Review: T. Stewart	
Flat, low elevation unit. No stability concerns.			
Wildlife	Field Review: M. Minnillo, 7/08/93	Office Review: M. Hall	
Riparian travel corridor along southern boundary of unit is heavily used by deer, bear, wolves and beaver. Class I stream buffer will help maintain this corridor. Western end of unit is higher volume TSHE, open stand, good thermal cover. Recommend leaving at least 50' strip of trees along muskeg on the northeast and southeast corner of unit to maintain hiding cover. Contiguous HCC/second growth to north, west, and east of unit; retain Level 2 structure.			
Visual/Recreation	Field Review: S. Bedross	Office Review: S. Bedross, M. Greenig	
Modified landscape. Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Timber west of Class I stream left to provide a future logical unit. 100' no-harvest buffer plus 100' selective harvest on both Class I streams. Harvest in selective cut buffers should be small groups (approximately 1/4 acre in size). Type A clearcut outside selective harvest buffers. Mitigation measures for this unit are as follows: F4, F5, F8, W2, W5, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 591

UNIT : 403

QUAD : C4-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

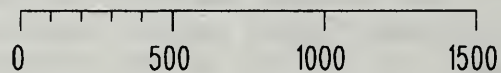
● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

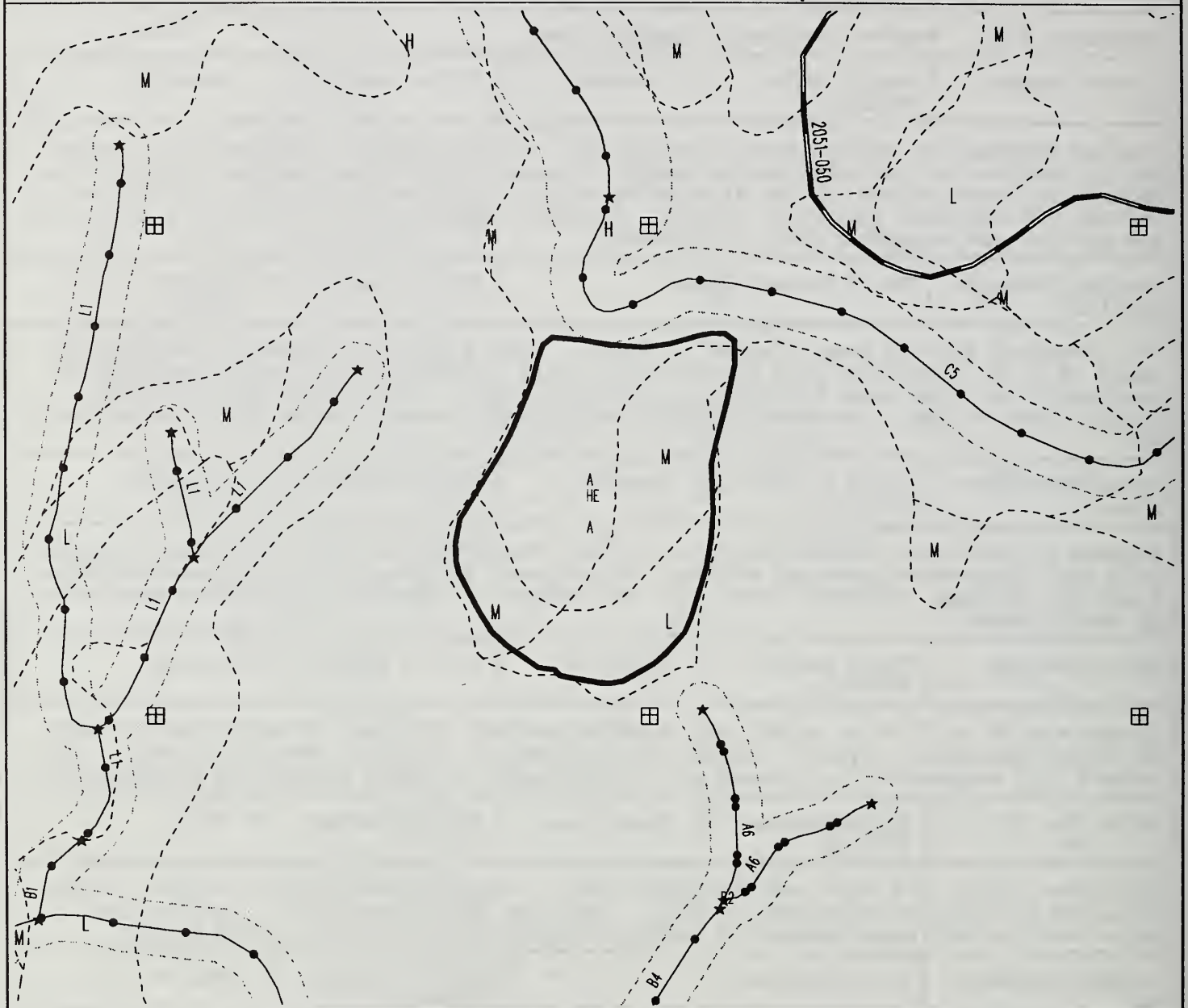
VCU #: 591	UNIT #: 403	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/790-9
ACRES: 21	VOL.: 188.2 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Western Peninsula Central Area			
Timber/Vegetation	Field Review: T. Stecher, 8/23/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar. Regeneration predominantly hemlock but includes yellow-cedar. Alaska yellow cedar decline evident. Regeneration concerns due to low site index soils in the southern half. Helicopter harvest the northern pocket of timber. Consider removing unit from unit pool due to low quality and economic costs of harvest.			
Logging/Transportation	Field Review: None	Office Review: K. Martin	
Unit boundary has not been flagged in field. Road access was deemed infeasible because of a "V"-notch and high construction costs. Recommend helicopter yarding to landing at 34+00 on road #71-79-34.1. Average flight path = 4500 feet, average flight slope = -15%. Recommend cutting only merch timber to make unit more economical.			
Watershed/Fisheries	Field Review: B. Romey, 7/01/93	Office Review: J. Knutzen	
Streams in north and central part of unit are Class III and need to be split yarded with full suspension crossing stream. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness			
Soils/Geology	Field Review: M. Minnillo, 7/01/93	Office Review: J. Knutzen	
Slopes are 40 to 70 % in unit. Wet site in southern unit and directly west of unit. No slope instability noted. Unstable stream bank in southern portion of unit. Recommend full suspension to prevent soil disturbance on upper slopes and stream banks.			
Wildlife	Field Review: M. Minnillo, 7/01/93	Office Review: M. Hall	
High deer, bear, and wolf use throughout unit. Woodpeckers audible in unit. Heron observed in riparian area east of unit. Many new HCC's near unit. Retain Level 3 structure due to large expanse of natural fragmentation in surrounding matrix.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type G shelterwood helicopter harvest to maintain structure per wildlife recommendation. Directionally fall and yard away from all Class III streams in unit. Mitigation measures for this unit are as follows: F1, F2, F5, F6, W1, W2.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 591

UNIT : 405

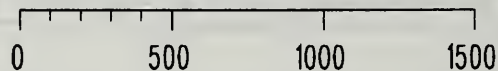
QUAD : C4-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 591	UNIT #: 405	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/790-30
ACRES: 27	VOL.: 957.4MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Western Peninsula Central Area.			
Timber/Vegetation	Field Review: G. Hedin, 7/15/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar but a few spruce and cedar are present. Regeneration predominantly hemlock but includes a few cedar and spruce. Moderate to high amounts of mistletoe infection evident in canopy. Rock bluffs on the higher elevations of the unit. Many benches and terraces also present. Windthrow damage present in areas throughout unit. Rocky soils in areas. Harvest all mistletoe infected hemlock and cut infected regeneration.			
Logging/Transportation	Field Review: B. Wilkinson/J. Graves, 8/04/93	Office Review: E. Urstadt	
Road access was attempted from the NE but a large bridge is required. Recommend helicopter yarding. Partial cutting is possible. A 100 foot stream buffer is required on the north boundary.			
Watershed/Fisheries	Field Review: B. Romey, 7/02/93	Office Review: J. Knutzen	
No streams inside unit boundary. A class I stream flows along the east side of unit, requiring a 100 foot buffer.			
Soils/Geology	Field Review: M. Minnillo, 7/02/93	Office Review: J. Knutzen	
Mostly stable slopes, but some areas of McGilvery soils near highest part of unit. Partial suspension is required in this area. Dissolution features common but no caves located; some small dolines present. Unit traversed on foot for karst inventory. Limestone present on upper part of unit. Topography indicated approximately 100' above sea level. Numerous Grikes and dolines, but poorly developed; no caves observed and very little surface water (may be indication of sub surface karst). The Karst features located in the unit are not well developed, relief and depth to water table probably slight. Not a significant karst area.			
Wildlife	Field Review: M. Minnillo, 7/02/93	Office Review: R. Fairbanks	
Directional fall away from muskeg located on the southeast corner of the unit. Level 1 structure retention. Goshawk survey conducted-no detections. Eagle, bear and deer sign/use evident. Cruisers observed bald eagle soaring over unit. Woodpecker cavities identified.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Important local native sites identified during post-field scoping. Unit and vicinity require detailed cultural resource inventory prior to any road or unit layout. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Type C clearcut. Stream north of unit needs 100' buffer. Mitigation measures for this unit are as follows: M2, F3, F5, W3, C1.

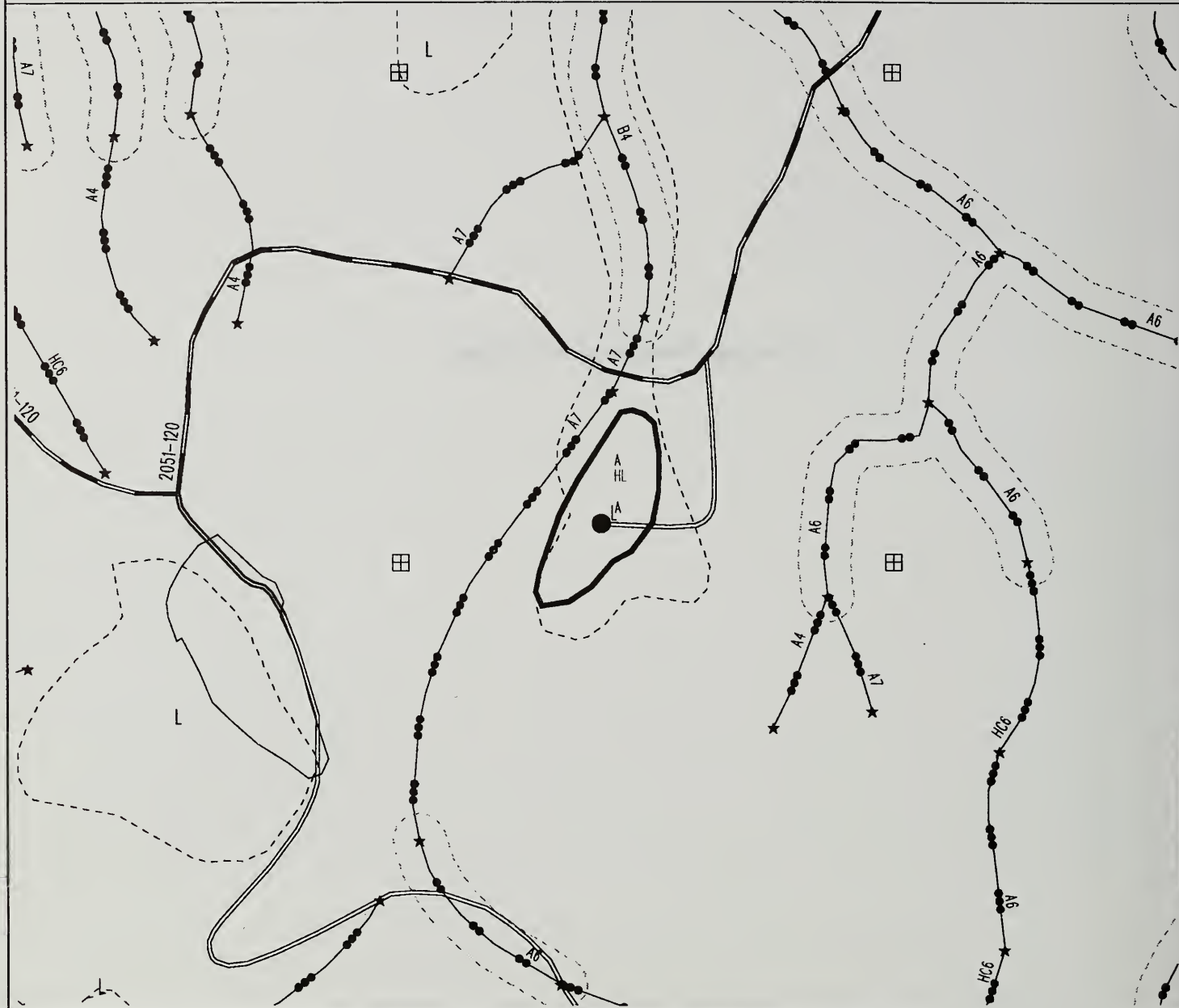
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD







VCU : 591




UNIT : 407

QUAD : C4-NW



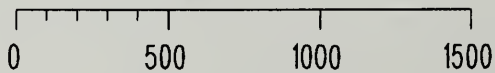
- | | |
|---|---|
|  | Revised Control Lake Project Boundary |
|  | Post-Field Unit Boundary w/ Setting Codes |
|  | Other Post-Field Unit Boundaries |
|  | USFS Timber - Volstrata |
|  | Eagle Tree Buffer at 330ft |
|  | Existing & Rebuilt Roads |
|  | F.S. Roads Under Construction |
|  | Post-Field Proposed Roads |
|  | Class 3 Treatment Zone |

-  Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41
 Landings
 Stream & Lake NaCUT Buffers

-  Ahmu-Class 1 & Stream Chantypes
 Ahmu-Class 2 & Stream Chantypes
 Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 591	UNIT #: 407	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/790-30
ACRES: 5.1	VOL.: 100 MBF	LOGGING SYSTEM: Highlead	
LANDSCAPE ZONE: Western Peninsula Central Area.			
Timber/Vegetation	Field Review: J. Miller, 8/03/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar but a few spruce are present. Regeneration predominantly hemlock but includes some spruce. Moderate to high amounts of mistletoe infection evident in canopy. Lower site index/productivity present in southern portion. Mixed conifer, salal present. Harvest all mistletoe infected hemlock and cut infected regeneration during harvest and thinning treatments. Promote spruce/cedar regeneration through planting and slight soil scarification.			
Logging/Transportation	Field Review: J. Spolar/B. Wilkinson, 8/03/93	Office Review: E. Urstadt	
Unit was split into two sub-units which encompass the only merch timber. Unit is accessed by Road #2051105. A 70 foot tower with highlead system will work. Tailholds may need tie-backs. North sub-unit has very poor economics. South unit has poor economics.			
Watershed/Fisheries	Field Review: B. Romey, 7/02/93	Office Review: J. Knutzen	
Stream in NW portion of unit needs a 100' buffer for this Class II area, and it changes to a Class III stream in the unit needing split yard, directional fall, full suspend across stream.			
Soils/Geology	Field Review: M. Minnillo, 7/02/93	Office Review: J. Knutzen	
Low slopes; no stability problems.			
Wildlife	Field Review: M. Minnillo, 7/02/93	Office Review: M. Hall	
Unit is the same general scrubby, muskeg habitat as surrounding area. No concerns. There are plenty of snags in surroundings. Moderate to high deer use. Retain Level 2 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in Middleground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Important local native sites identified during post-field scoping. Unit and vicinity require detailed cultural resource inventory prior to any road or unit layout. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Boundary was modified to provide stream buffers. Type A clearcut because of unit size, adjacent timber and snags. Mitigation measures for this unit are as follows: F4, F5, F8, W5, W10, R1, C1,			

QUAD : C4-NW



CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

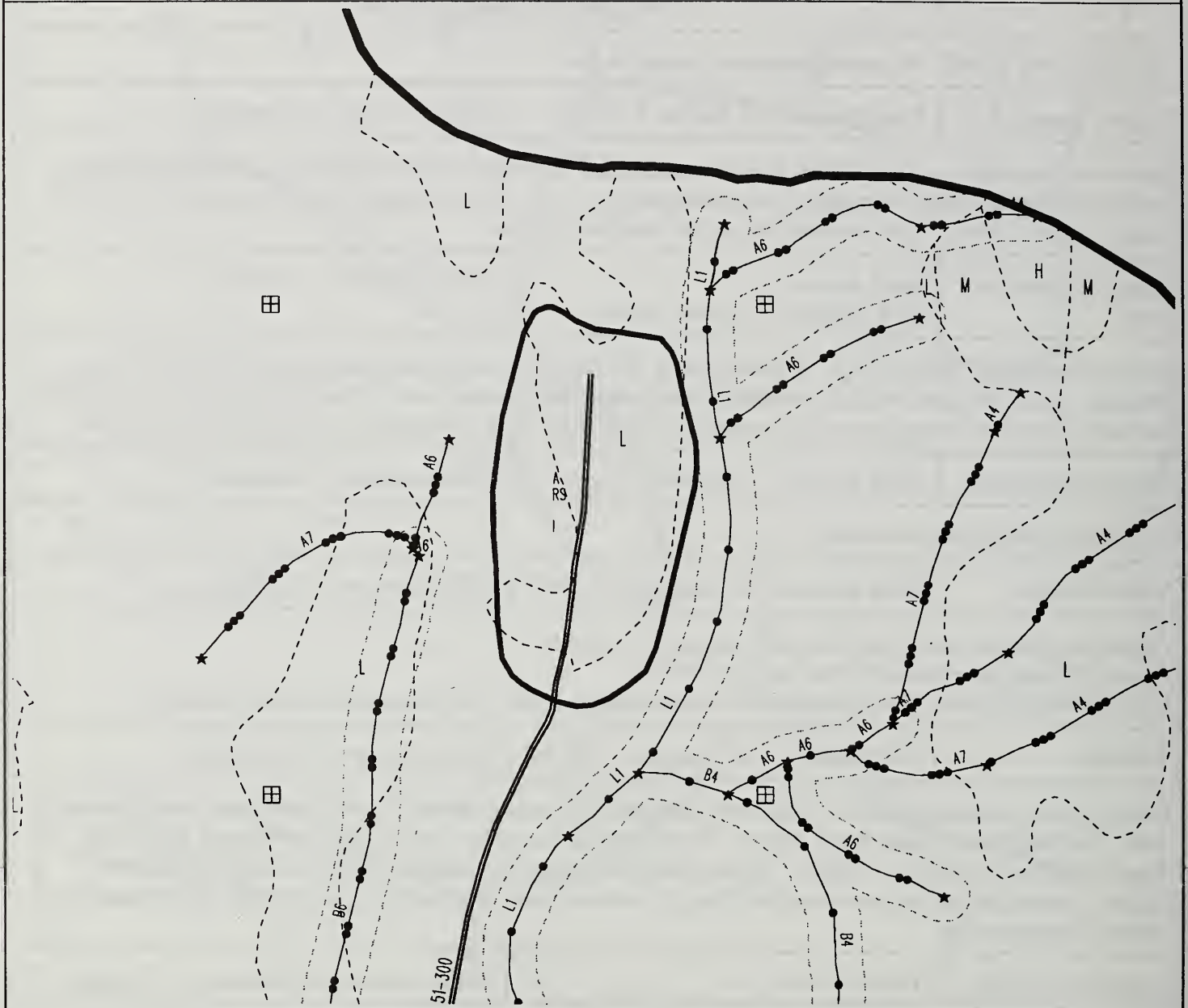
VCU #: 591	UNIT #: 409	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/790-30
ACRES: 7.7	VOL.: 105.0 MBF	LOGGING SYSTEM: Slackline with 70' Tower, Swingyarder/Running Skyline	
LANDSCAPE ZONE: Western Peninsula Central Area.			
Timber/Vegetation	Field Review: G. Hedin, 7/15/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar but a few spruce are present. Regeneration predominantly hemlock but includes a few cedar and spruce. Low volume, multi-species stand with < 50% canopy closure and low site productivity in the northern portion.			
Logging/Transportation	Field Review: B. Wilkinson/J. Graves, 8/04/93	Office Review: E. Urstadt	
Unit is accessed by Road #2051. Recommend a 70 foot tower with slack line system to maximize suspension. Artificial guys will be needed and equipment anchors will work. Partial suspension is possible on steep slopes. A swing yarder with running skyline will work for the south setting. Fair economics.			
Watershed/Fisheries	Field Review: B. Romey, 7/02/93	Office Review: J. Knutzen	
No streams inside unit boundary.			
Soils/Geology	Field Review: M. Minnillo, 7/02/93	Office Review: J. Knutzen	
Partial suspension where possible due to steep, rocky soils. Geology/Karst (D. Herron/R. Horrocks, 8/23/93): Unit traversed on foot. Poor exposures of non-carbonate rock. No limestone or karst observed.			
Wildlife	Field Review: M. Minnillo, 7/02/93	Office Review: R. Fairbanks	
Heavy browse throughout unit. Wolf, bear, and deer sign use evident. Several deer seen in and around unit. Wolf sign also found in top of unit. Wolf howling heard by cruiser. Higher volume than most stands in area, but still low volume. Recommend dropping the northern portion of unit to maintain higher volume habitat for cover and bedding by deer and bear. Retain Level 1 structure due to matrix of natural fragmentation.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Post-field boundary minimizes visibility from West Coast Waterway. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Important local native sites identified during post-field scoping. Unit and vicinity require detailed cultural resource inventory prior to any road or unit layout.			
Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut because unit is only 7.7 acres in size and has only 105 MBF. Mitigation measures for this unit are F8, W5, W10, R1, C1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 401

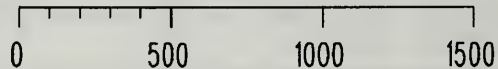
QUAD : C4-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

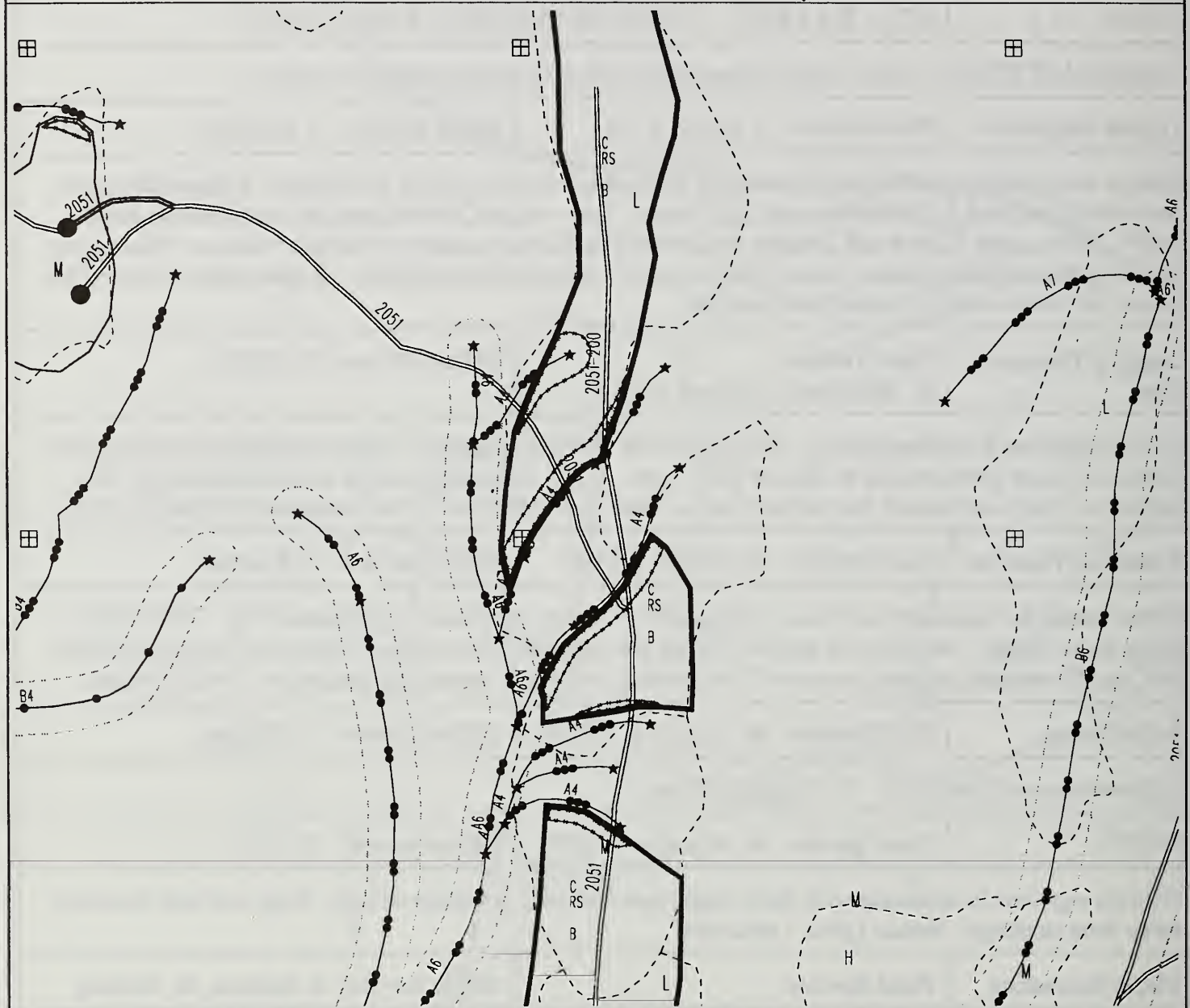
VCU #: 593	UNIT #: 401	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990-78
ACRES: 24.2	VOL.: 258.1 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within Eleven-Mile Creek Late Successional Corridor.			
Timber/Vegetation	Field Review: J. Miller, 8/5/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar but a few spruce are present. Regeneration predominantly hemlock but includes cedar and spruce. Low volume, mixed-species, multi-canopy stand with < 50% canopy closure and low site productivity in the north and south ends of the unit. Poor regeneration in the northeast corner possibly due to snow damage/poor site effects. Regeneration concerns due to low site index soils in the northeast portion.			
Logging/Transportation	Field Review: B. Wilkinson/J. Graves, 8/12/93	Office Review: M. Whitty	
Unit designed as a running skyline. Sixty percent is downhill logging. Partial suspension is not required. Partial cut is not practical due to lack of "lift" trees. A 100 foot stream buffer is on the east edge. The north tip of unit was deleted due to poor timber (less than 8MBF/ac). Unit is accessed by Road #2051300.			
Watershed/Fisheries	Field Review: B. Romey, 8/03/93	Office Review: J. Knutzen	
Stream along SE boundary is a Class I, flagged B/W along upper half, implemented 100' TTRA buffer along entire length. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: M. Minnillo, 8/03/93	Office Review: J. Knutzen	
Little evidence of instability. Fairly gentle slopes.			
Wildlife	Field Review: M. Minnillo, 8/03/93	Office Review: M. Hall	
Wildlife sign low to moderate with fairly high used deer trail at bottom of unit. Keep east unit boundary away from muskegs. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type I group selection with the objective of yarding away from areas of acceptable regeneration and addressing wildlife concerns. Southeast portion of unit Class I stream implemented with 100' stream buffer. Mitigation measures for this unit are as follows: F4, F5, F8, F10, W2, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 402

QUAD : C4-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 593	UNIT #: 402	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990-78
ACRES: 46.9	VOL.: 650.3 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is within Eleven-Mile Creek Late Successional Corridor.			
Timber/Vegetation	Field Review: T. Stecher, 8/5/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock but includes some spruce and a few cedar (candidate for release). Low volume with < 50% canopy closure and low site productivity in south end and the middle portion. Rock bluffs on the higher elevations of the unit (eastern side) should be removed from the unit. Windthrow damage evident throughout the unit. Alaska yellow cedar decline evident throughout the unit. Dead, are mostly unmerchantable.			
Logging/Transpor- tation	Field Review: B. Wilkinson/J. Graves, 8/09/93	Office Review: K. Jehnke	
Unit is accessed by Road #2051200. Recommend yarding with a swing yarder and running skyline. Partial suspension is required on slopes > 60%. Fifty percent of this area can achieve partial suspension. Partial cut not feasible, due to lack of suspension. Run-out for downhill yarding is short in places. Fair economics. A 100 foot stream buffer is on the center-west boundary.			
Watershed/Fishes	Field Review: J. Metzler, 8/03/93	Office Review: T. Stewart	
Two Class IIA streams adjacent to the unit require 100' buffer. Ten Class III tributaries require directional falling, split yarding. The V-notch along the north boundary is very deeply incised and the inner gorge is unstable - keep north boundary south of the topographic break. Slope break buffers will be implemented along Class III streams adjacent areas will be treated to provide a reasonable assurance of wind-firmness.			
Soils/Geology	Field Review: J. Metzler 8/03/93	Office Review: T. Stewart	
Achieve partial suspension where slopes > 60%.			
Wildlife	Field Review: J. Metzler/M. Minnillo, 8/03/93	Office Review: M. Hall	
Evidence of heavy deer use, especially along west-facing slopes. Two adult eagles observed flying out of trees near middle of unit. High deer sign. Wolf and bear sign also identified. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Maintain 100' buffers on Class II stream on west of unit. Achieve partial suspension where slopes are > 60%. Partial suspension is only possible over 1/2 of the area having > 60% slope. Buck logs to 16' plus trim multiples to achieve partial suspension in remainder of unit. Use retention corridors with boundaries maintained 50' from streams. Two narrow areas between Class III streams excluded from unit, Type B and D clearcut. Mitigation measures for this unit are as follows: F1, F3, F5, F6, F7, F8, F10, W1, W4, W10, R1.

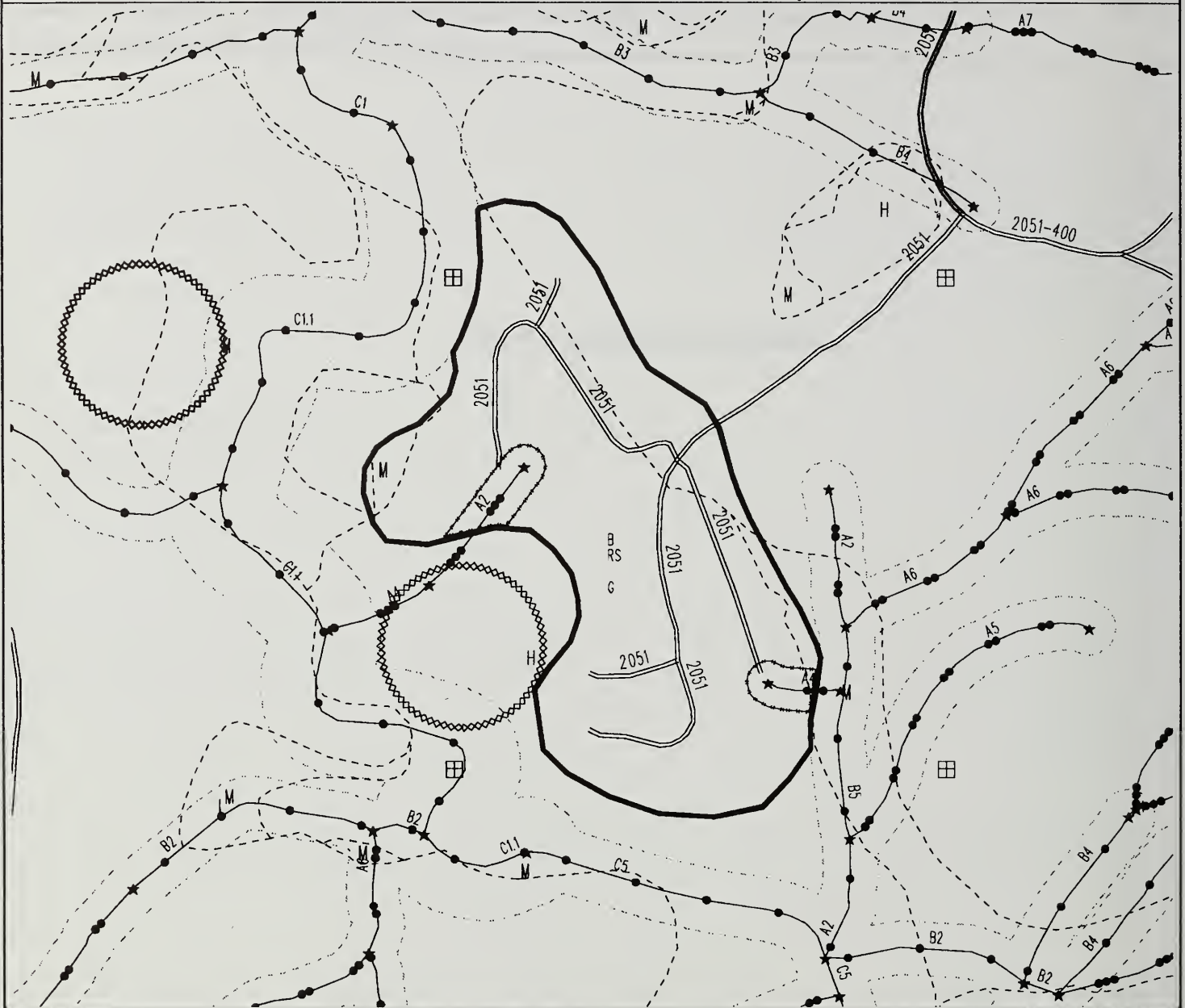
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 408

QUAD : C4-NW



- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

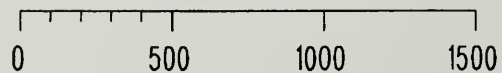
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 593	UNIT #: 408	QUARTER QUAD: C4NW	PHOTO YR/#: 5-1990/76
ACRES: 54.3	VOL.: 1963.5 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is in Eleven Mile Creek Late Successional Corridor and partially in Eleven Mile Block.			
Timber/Vegetation	Field Review: J. Miller, 7/29/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce. Regeneration predominantly hemlock but includes some spruce. Light windthrow damage evident in small patches throughout the unit. Low to moderate amounts of root disease evident in hemlock in south-central portion. Light amount of mistletoe infection evident in canopy.			
Logging/Transportation	Field Review: K. Martin/B. Flatz, 7/29/93	Office Review: E. Urstadt	
Unit is accessed by Road #2051 and two spurs. The north portion should be shovel logged. The SE is suitable for a swingyarder using running skyline. Partial cut is feasible. Suggest leaving nonmerch timber along boundary to minimize blowdown. Tailholds may be needed in TTRA buffer. This unit has various stream buffers and one eagle buffer. Very good economics.			
Watershed/Fisheries	Field Review: E. Ablow, 7/03/93	Office Review: T. Stewart	
Stream 1 is a Class I stream that surrounds the southwest boundary. The northern 3/4 of the stream along the boundary is channel typed C1 which requires a 200' buffer. The Southern 1/4 of the stream is channel typed C5 and requires a 100' buffer. Stream 2 surrounds the southern half of the eastern boundary. It is a Class I stream channel type B5 and requires a 100' buffer plus a 50' selective cut buffer. Stream 3 is a Class II, A2 stream channel that flows into Stream 2. It also requires a 100' buffer. Coho fry are abundant. Class I streams have excellent habitat, large pools, and good cover (LWD and boulders). The side slopes of all Class I streams are steep (75% and above) and show some signs of small slides. Recommend not cutting below slope breaks on all Class I streams even if it requires extending buffers beyond the required minimum. Stream 4 is a Class III, A4-A2 stream that flows into the center of the southern boundary joining Stream 1. Stream 5 is a Class III, A4 stream that flows into the center of the eastern boundary. They both require harvest to slope break, split yarding, and directional falling away from stream, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: E. Ablow, 7/03/93	Office Review: T. Stewart	
Side slopes of streams are steep (75% and above) and show signs of sliding. The unit above 450' elevation is stable and roughly 30% slope. Recommend not cutting below 450' elevation on southern boundary.			
Wildlife	Field Review: H. Sloan, 7/02/93	Office Review: M. Hall/C. Confer, 8/17/93	

Bear and deer sign/use evident. Bald eagle's nest located near center of unit. Western unit boundary was extended out a short distance to get a high quality winter range spruce. This occurred right by a Class III stream which was missed during resource visit. John Goering expressed concern over yarding this spruce through this newly discovered stream. The situation was noted by John during a revisit to flag the two eagle nests in and near the unit on 8/19/93. Split yarding on the stream is required. Partial suspension or split yarding would be desirable for this stream due to affluence to a Class I stream (sediment loading, erosion potential) flagged G/W from muskeg within unit in north to northeast section to nest tree. Nest tree - flagged B/W (large, approximately 6' diameter spruce), 330' buffer required. Level 1 structure retention. Goshawk survey performed - no detections. Murrelet survey conducted - occupancy behavior observed. Second nest located west of unit approximately 500'. Timing restrictions on blasting will exist if road is within 1/2 mile of either nest. Contiguous area with many dead trees. Plucking post was found in southern portion of unit. Remains identified as hermit thrush - probable sharp-shinned hawk use.

Visual/Recreation

Field Review:

Office Review: S. Bedross, M. Greenig

Unit not seen from any priority travel route or use area.

Cultural/Lands

Field Review:

Office Review: T.W. Greiser, M. Greenig

Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.

Interdisciplinary Team Recommendations

Class I streams are excluded from unit. Splityard Class III stream in west of unit. Eagle nest located and flagged - buffer excluded from unit. Type G - shelterwood. Constraints to maintain structure and promote long term conversion back to winter range. Mitigation measures for this unit are as follows F1, F3, F5, F6, F7, F8, W1, W2, W8,

W10, R1

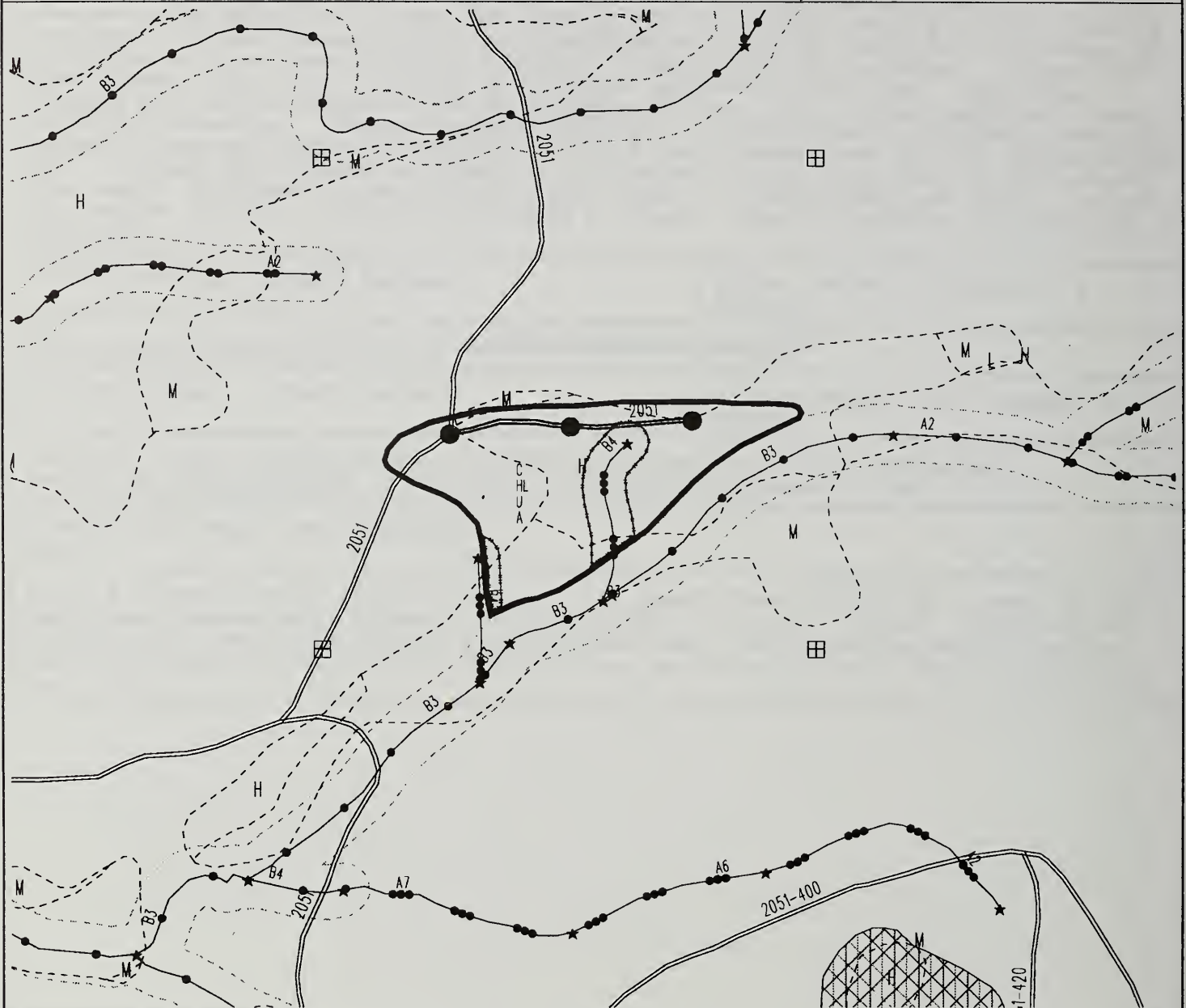
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 409

QUAD : C4-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

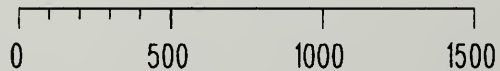
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

May 07, 1998

Scale in Feet



CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

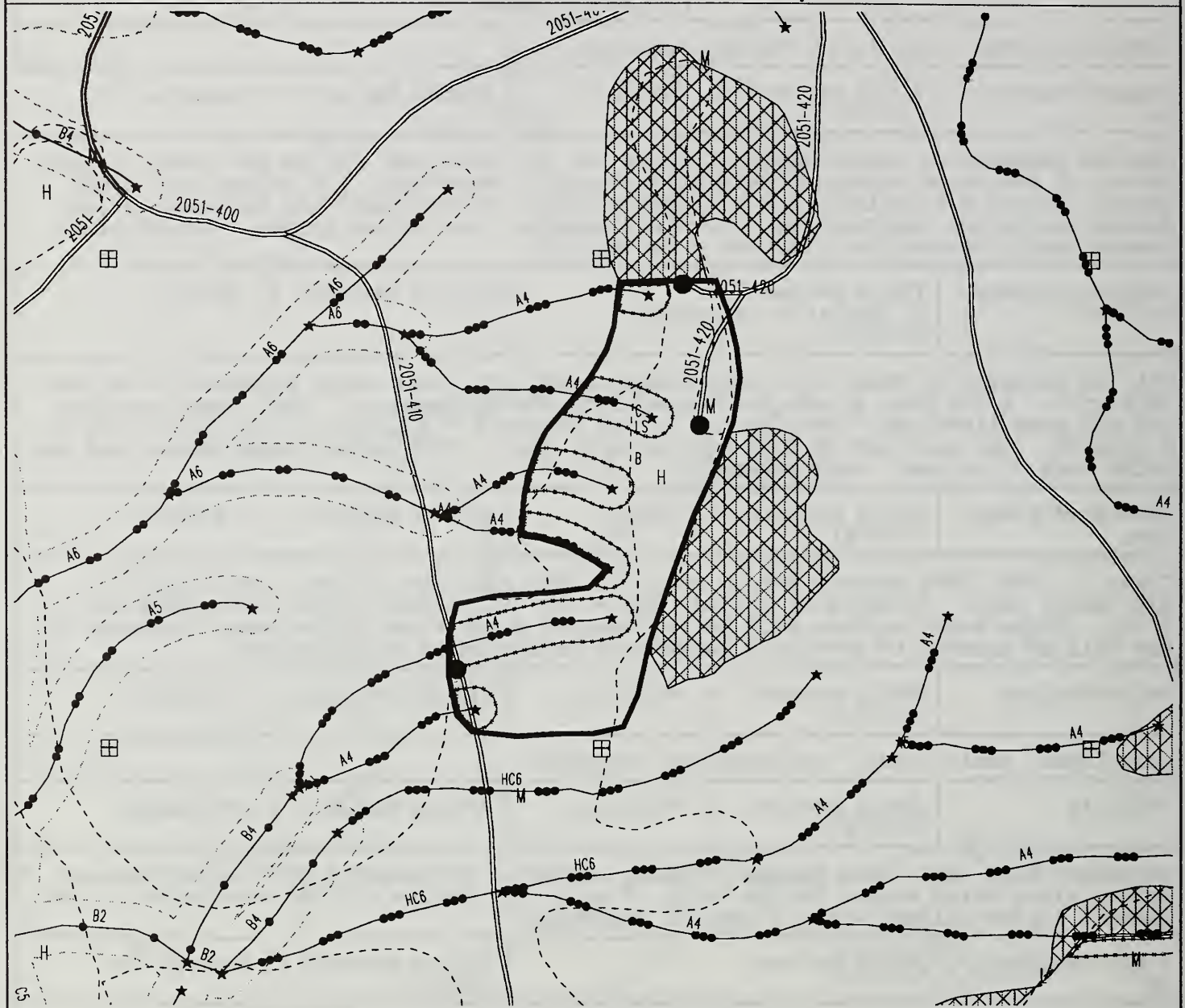
VCU #: 593	UNIT #: 409	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990/77
ACRES: 16.9	VOL.: 295.5 MBF	LOGGING SYSTEM: Highlead with 70' Tower South of Road, Shovel	
LANDSCAPE ZONE: Unit is in Western Peninsula.			
Timber/Vegetation	Field Review: G. Hedin, 7/27/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Light amount of mistletoe infection evident in canopy. Moderately low volume with < 50% canopy closure & relatively low site productivity in northeast and southwest areas. Muskeg incursions incorporated with mixed species, low volume timber. Regeneration predominantly hemlock but includes a few spruce.			
Logging/Transportation	Field Review: J. Spolar/B. Wilkinson, 8/06/93	Office Review: M. Whitty	
Unit is accessed by Road #2051. Recommend a 70 foot tower using highlead to harvest this unit. A 100 foot stream buffer is along the SE boundary. Tail trees are fair and may need tie-backs. Partial cut is not feasible. Blowdown in the buffer may be a problem. The east and SW tips were deleted due to TTRA buffer requirements and related lack of volume. Fair economics.			
Watershed/Fisheries	Field Review: B. Romey, 7/20/93	Office Review: T. Stewart	
Class I - 100' TTRA buffer, B/W on south of unit. Streams 2 and 3 are Class III - O/W, split yard. Stream 4 is a Class IIa - B/W, 100' TTRA buffer (excluded from unit). Slope break buffers will be implemented along class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: M. Minnillo, 7/20/93	Office Review: T. Stewart	
Low slopes, small trees. No stability concerns.			
Wildlife	Field Review: M. Minnillo, 7/20/93	Office Review: R. Fairbanks	
Recommend bald eagle nest survey prior to harvest. Recommend a 150' select harvest buffer along large muskeg to the north of unit. Structure will be maintained in the Class I stream buffer. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Unit reduced in size from original because stream buffers reduced available timber. 100' buffer on Class I stream at south boundary. Recommend bald eagle survey prior to final layout. Type A clearcut. Mitigation measures for this unit are as follows: F5, F8, F10, W1, W5, W10, R1, W8.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 410

QUAD : C4-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

May 07, 1998

'CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

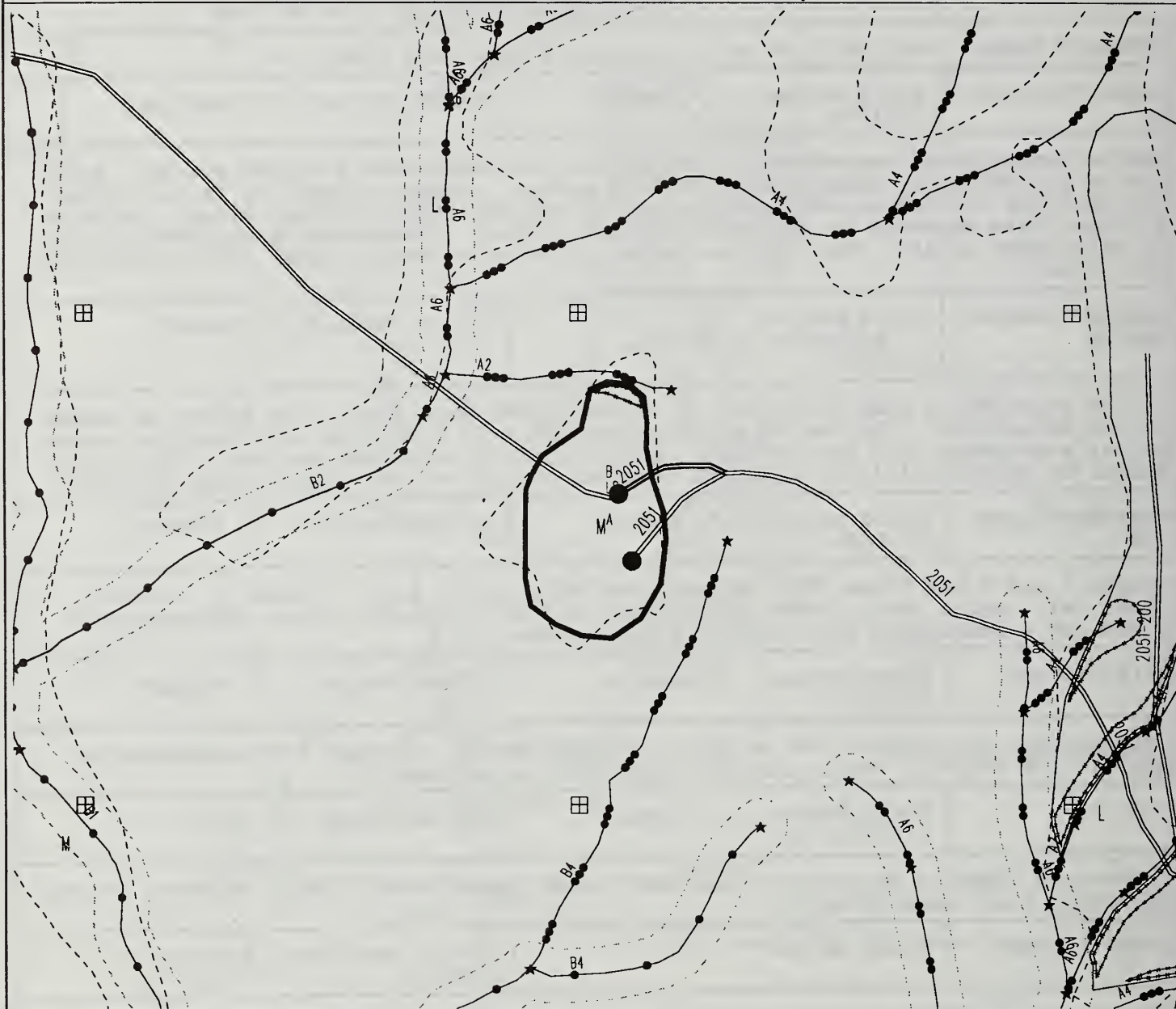
VCU #: 593	UNIT #: 410	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990-76
ACRES: 27.1	VOL.: 529 MBF	LOGGING SYSTEM: Slackline with 70' Tower/Shotgun System/ Live Skyline	
LANDSCAPE ZONE: South half of unit is within Eleven Mile Block.			
Timber/Vegetation	Field Review: T. Stecher, 7/23/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock but includes spruce. Slope instability/failure potential existing with relatively shallow soils, and poor soil drainage areas. Evidence of recent mass movement in the north-central portion. Regeneration concerns due to low site index soils. Very shallow soils. Windthrow damage present in northern section of unit.			
Logging/Transportation	Field Review: J. Spolar/B. Wilkinson, 7/28/93	Office Review: E. Urstadt	
Unit is accessed by Road #2051420. A 70 foot tower with slack line system is needed for the SW setting. The two NE settings can use a 70 foot tower with shotgun system. Partial suspension will be possible. Guy stumps and tailholds are poor. Will need deadman or other artificial anchors. Partial cut is not practical. Fair economics.			
Watershed/Fisheries	Field Review: R. Rogers, 7/19/93	Office Review: T. Stewart	
Streams 1 and 2 are Class III - directional fall, split yard. Stream 3 - directional fall, split yard, leave slope break buffer, adjacent areas will be managed to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: R. Rogers, 7/19/93	Office Review: T. Stewart	
Drop northern 1/2 of unit due to thin, unstable soils. Attempt full suspension on southern 1/2 of unit; attain partial suspension at minimum.			
Wildlife	Field Review: H. Sloan, 7/19/93	Office Review: M. Hall	
No concerns. Level 1 structure retention. Wolf tracks identified in adjacent muskegs and within south edge of unit.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in Middleground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Boundary modified due to soil stability concerns. Directionally fall and split yard Class III streams. Retain blind lead area and retain areas that cannot be split yarded. Achieve maximum possible suspension. Type B clearcut. Mitigation measures for this unit are as follows: F1,F3,F4,F5,F6,F8,W1,W4,W10,R1.			










CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD





VCU : 593

UNIT : 417




QUAD : C4-NW



- | | |
|---|---|
|  | Revised Control Lake Project Boundary |
|  | Post-Field Unit Boundary w/ Setting Codes |
|  | Other Post-Field Unit Boundaries |
|  | USFS Timber - Volstrata |
|  | Eagle Tree Buffer of 330ft |
|  | Existing & Rebuilt Roads |
|  | F.S. Roads Under Construction |
|  | Post-Field Proposed Roads |
|  | Class 3 Treatment Zone |

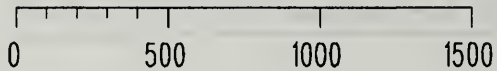
-  Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41

- Landings
- - - - - Stream & Lake NoCUT Buffers

-  Ahmu-Class 1 & Stream Chantypes
 Ahmu-Class 2 & Stream Chantypes
 Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

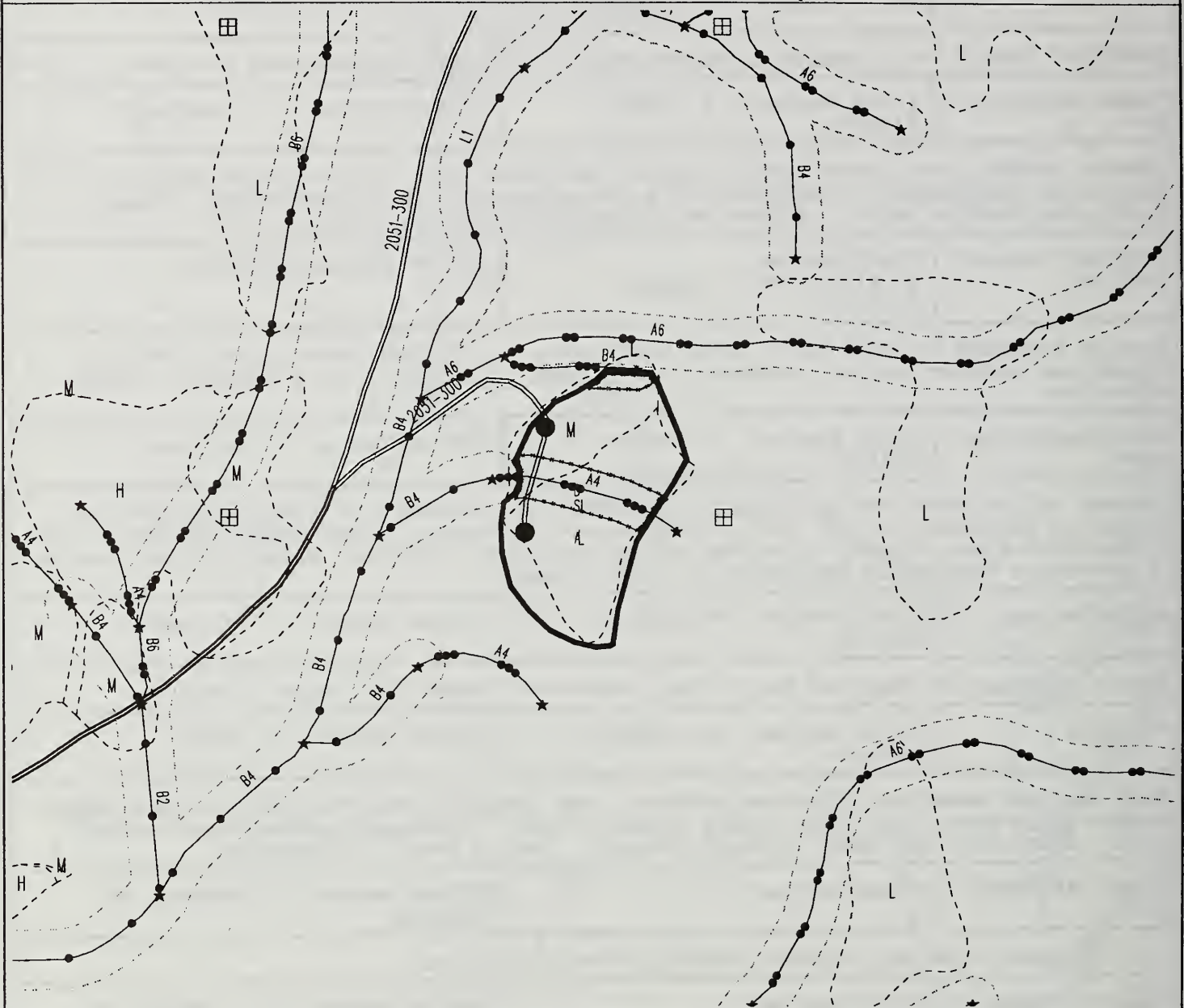
VCU #: 593	UNIT #: 417	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990-78
ACRES: 10.2	VOL.: 172.8 MBF	LOGGING SYSTEM: Live Skyline/Shotgun with 70' tower	
LANDSCAPE ZONE: Unit located in Eleven Mile Creek Late Successional Corridor.			
Timber/Vegetation	Field Review: G. Hedin, 8/10/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Steep, rocky, and shallow soils. Alaska yellow-cedar decline evident.			
Logging/Transportation	Field Review: B. Wilkinson/J. Graves, 8/13/93	Office Review: M Whitty	
Unit is accessed by Road #2051 and a short spur. A 70 foot tower using a shotgun system can achieve partial suspension (required). Partial cut is feasible. Good economics.			
Watershed/Fisheries	Field Review: B. Rogers, 8/03/93	Office Review: J. Knutzen	
Streams to the north and southeast are Class III. Stream to the north is G/W and stream to southeast is O/W (No G/W hung on north stream). Slope break buffers will be implemented along Class III stream to the southeast, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: M. Minnillo, 8/03/93	Office Review: J. Knutzen	
Partial suspension required due to wet, moderate slopes with large timber.			
Wildlife	Field Review: M. Minnillo, 8/03/93	Office Review: M. Hall	
High deer and some bear sign/use evident. Two goshawks observed flying above and in stand - high amount of large downed trees in unit. Recommend goshawk/nest survey prior to harvest; may need to avoid habitat. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut. Conduct goshawk survey prior to layout/harvest to determine if nesting/use is occurring. Mitigation measures for this unit are as follows: F1,F3,F4,F5,F6,F8,W1,W5,W9,W10,R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 418

QUAD : C4-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

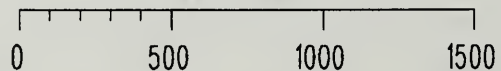
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

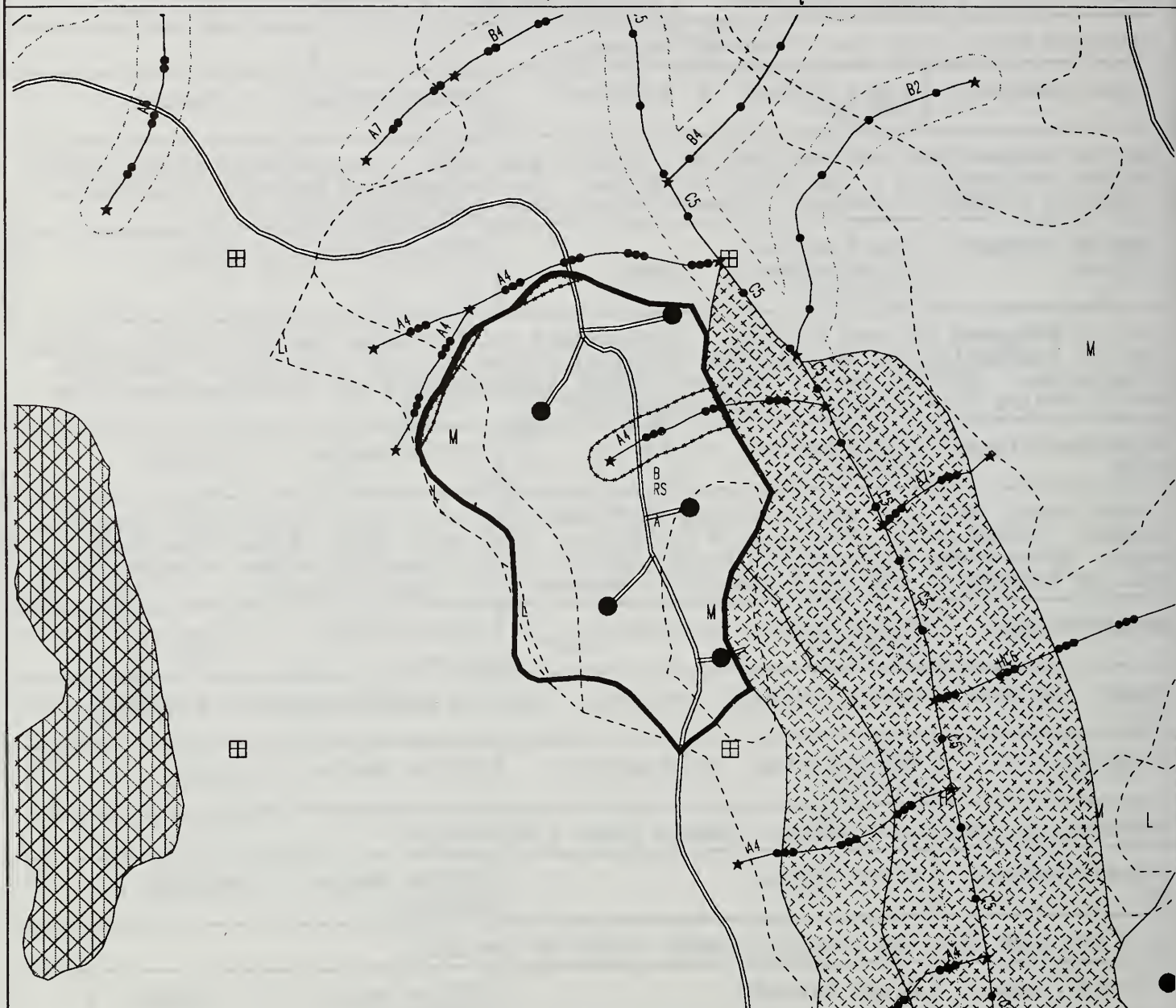
VCU #: 593	UNIT #: 418	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990-78
ACRES: 12.7	VOL.: 333 MBF	LOGGING SYSTEM: Slackline with 70' Tower	
LANDSCAPE ZONE: Unit is in Western Peninsula.			
Timber/Vegetation	Field Review: S. Karstens, 7/20/93	Office Review: J. Goering	
Species composition includes hemlock, spruce, and cedar. Regeneration predominantly hemlock but includes a few cedar and spruce. Low to moderate amounts of mistletoe infection evident in canopy. Alaska yellow cedar decline evident.			
Logging/Transportation	Field Review: B. Wilkinson/J. Graves, 8/10/93	Office Review: K. Jehnke	
Unit is accessed by Road #2051300. Recommend a 70 foot tower using slackline system. Partial suspension can be achieved on 60% of the unit. One landing will need a mobile anchor. Partial cut is not practical. Engineers did not find unstable soils; verify during final layout. Good economics.			
Watershed/Fisheries	Field Review: B. Rogers, 8/03/93	Office Review: J. Knutzen	
Stream south, mid unit and north tip are Class III - G/W (none hung), fall away from stream. Stream north of unit is a Class IIB - O/W, split yard, directional fall away. Slope break buffers will be implemented along Class III stream adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: M. Minnillo, 8/03/93	Office Review: T. Stewart	
Steep, unstable slopes eliminated from unit. Achieve maximum possible suspension on unit.			
Wildlife	Field Review: M. Minnillo, 8/03/93	Office Review: M. Hall	
Moderate use deer/bear habitat. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut. Unstable soils eliminated from unit and maximum possible suspension achieved on remaining area. Mitigation measures for this unit are as follows: F1, F3, F5, F6, F8, F10, W1, W5, W10, R1.			










CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD





VCU : 593

UNIT : 419



QUAD : C4-SW



- | | |
|---|---|
|  | Revised Control Lake Project Boundary |
|  | Post-Field Unit Boundary w/ Setting Codes |
|  | Other Post-Field Unit Boundaries |
|  | USFS Timber - Volstrata |
|  | Eagle Tree Buffer of 330ft |
|  | Existing & Rebuilt Roads |
|  | F.S. Roads Under Construction |
|  | Post-Field Proposed Roads |
|  | Class 3 Treatment Zone |

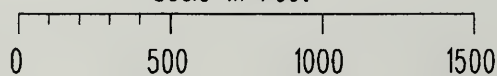
-  Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

-  Ahmu-Class 1 & Stream Chantypes
 Ahmu-Class 2 & Stream Chantypes
 Ahmu-Class 3 & Stream Chantypes

- ★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 593	UNIT #: 419	QUARTER QUAD: C4SW	PHOTO YR/ #: 1991/1990-75
ACRES: 39.3	VOL.: 1152.9 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline, Shovel	
LANDSCAPE ZONE: Located in Eleven-Mile Block.			
Timber/Vegetation	Field Review: J. Miller, 7/21/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce. Regeneration predominantly hemlock but includes a few spruce. Heavy amount of mistletoe infection evident in canopy. Some thin soil, poor soil drainage areas in the eastern portion with windfall. Exclude the eastern edge near the slope break due to soil stability concerns.			
Logging/Transportation	Field Review: E. DeWilde/D. Keister, 7/22/93	Office Review: M. Whitty	
Unit was changed from conventional yarding methods to helicopter logging systems. Partial cut is possible. The east boundary has a 240 foot stream buffer. This should be verified during final layout.			
Watershed/Fisheries	Field Review: B. Romey, 7/17/93	Office Review: G. McNaughton	
Stream 1 needs to be buffered 200' from bottom of slope break to eliminate unstable side slopes from unit. Stream 2 need 100' buffer (TTRA). Stream 3 is a Class III stream, slope break buffers will be implemented, and adjacent areas will be managed to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: B. Romey, 7/17/93	Office Review: G. McNaughton	
Slumps, slides, and seeps on side slopes along east boundary of unit. Buffer 200' up from bottom of slope break.			
Wildlife	Field Review: B. Romey, 7/17/93	Office Review: M. Hall	
Heavily used muskeg on west side of unit by bear and deer - leave buffer for wildlife corridor. Woodpecker observed and audible in unit. Red-tailed hawk nesting site observed by TC. Eagle observed flying over unit. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Maintain boundary at slope break due to stability concerns. Boundary flagged beyond here in field. Modified boundary by dropping portion above stream located on north-west boundary. Splityard Class III stream in east-central part of unit. Type A clearcut due to heavy mistletoe. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F6, F8, W1, W5, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 420

QUAD : C4-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

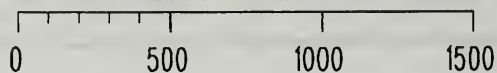
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes

- Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

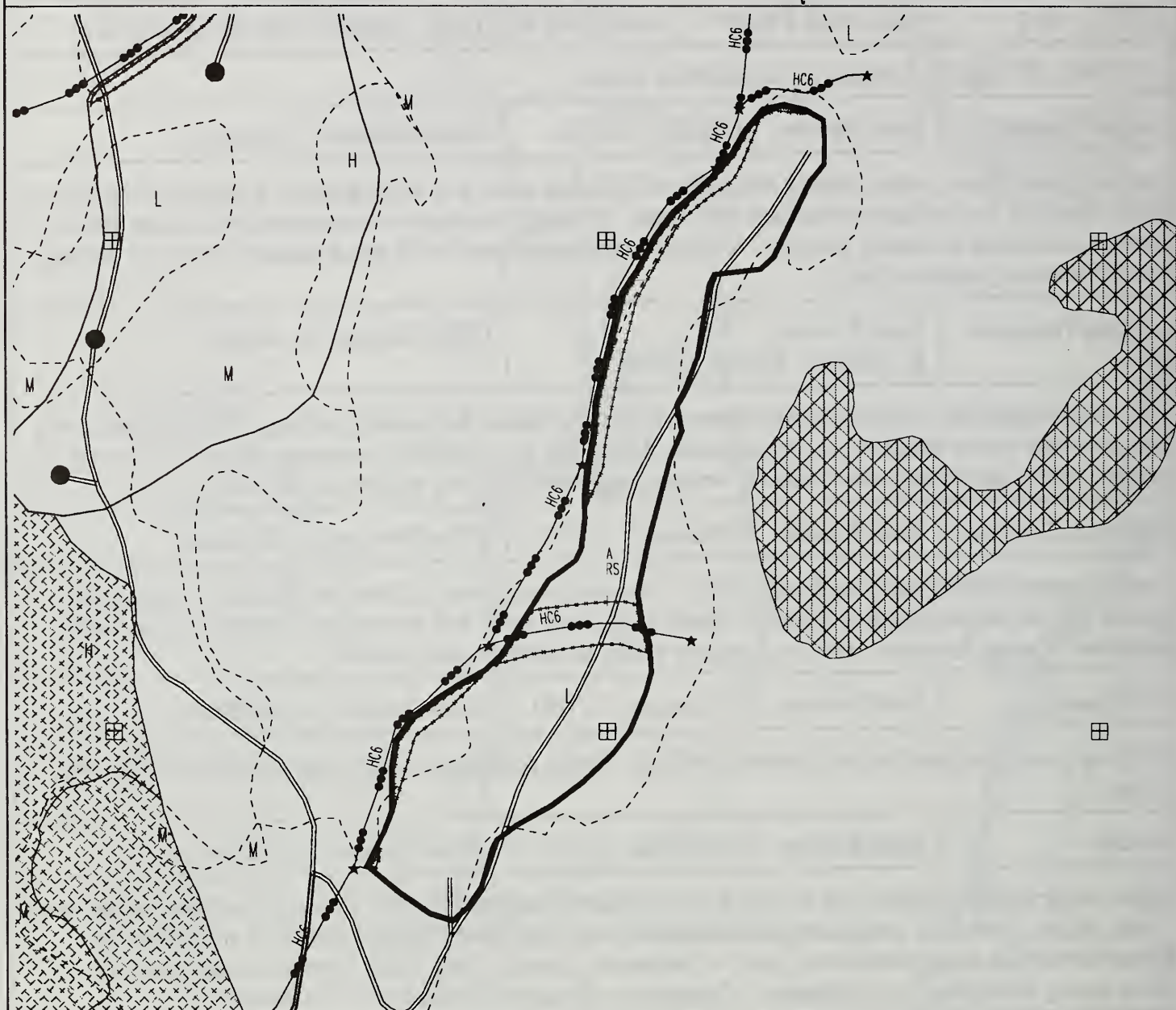
VCU #: 593	UNIT #: 420	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990-75
ACRES: 60.9	VOL.: 662.3 MBF	LOGGING SYSTEM: Slackline with Shotgun System	
LANDSCAPE ZONE: Located in Eleven-Mile Block.			
Timber/Vegetation	Field Review: G. Hedin, 7/21/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock but includes spruce and few cedar. Muskeg incursions incorporated with mixed species, low volume timber in eastern portion. Windthrow damage present with some thin soil, poor soil drainage areas in western portion of unit.			
Logging/Transportation	Field Review: K. Martin/J. Spolar, 7/23/93	Office Review: K. Jehnke	
Unit was designed for a slackline cable system but is changed to helicopter yarding. Partial suspension is recommended where feasible but not required. Partial cut is not feasible on steeper slopes and downhill settings. Some guy stumps and tailholds are poor and need artificial anchors or tie backs.			
Watershed/Fisheries	Field Review: M. Minnillo, 7/17/93	Office Review: A. Wolfson	
Class III green/white stream north end of unit. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness. Split yard stream buffer in northern part of unit.			
Soils/Geology	Field Review: M. Minnillo, 7/17/93	Office Review: A. Wolfson	
McGilvery soils mapped but not observed in field. Partial suspension where possible due to steep, wet slopes.			
Wildlife	Field Review: M. Minnillo, 7/17/93	Office Review: R. Fairbanks	
Retain eastern unit boundary just to top of hill in order to maintain intensively used deer/bear habitat area to east of unit. Maintain snags along unit boundary and large sound snags within unit where feasible. Recommend bald eagle nest survey prior to harvest in unit and along Class I stream to the west. Gos-hawk survey conducted - no detections. Contiguous old-growth; retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in Middle-ground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Partial cut in areas of uphill yarding (Type I single tree/group selection). Type A clearcut in remainder of unit. Use slackline system to achieve partial suspension. Splityard stream buffer on deep V-notch in north center of unit. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F6, F8, W1, W2, W5, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 421

QUAD : C4-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

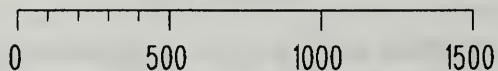
★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 593	UNIT #: 421	QUARTER QUAD: C4NW	PHOTO YR/ #: 1991/1990-75
ACRES: 35.2	VOL.: 296.5 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within proposed Eleven-Mile Block.			
Timber/Vegetation	Field Review: S. Karstens, 7/21/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Muskeg incursions incorporated with mixed species, low volume timber and cedar regeneration in northern portion. Windthrow damage present in eastern portion of unit. Steep, rocky, and shallow soils with rock bluffs along the eastern portion of the unit.			
Logging/Transportation	Field Review: B. Wilkinson/J. Spolar, 8/05/93	Office Review: K. Jehnke	
Unit was designed for Running Skyline yarding system now changed to helicopter yarding. Seventy percent is uphill yarding. Partial suspension can not be achieved and is not required. Partial cut not possible due to lack of "lift" trees. Tailholds need tie-backs. Guy stumps are poor; deadman or tie-backs maybe required.			
Watershed/Fisheries	Field Review: B. Romey, 7/17/93	Office Review: T. Stewart	
Stream 1 flagged as Class III - orange/white, fall away slope break stream buffer. No selective harvest buffers are required. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: M. Minnillo, 7/17/93	Office Review: T. Stewart	
Slopes are damp, but stable. Instability does not seem to be a problem.			
Wildlife	Field Review: M. Minnillo, 7/17/93	Office Review: M. Hall	
Bear and deer sign/use evident. Recommend snags be left along stream on west side of unit if feasible. Goshawk survey conducted - no detections. Sandhill crane heard west of unit. Contiguous old-growth. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in Middle-ground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type I group selection. Splityard and directional fall trees away from Class III stream buffers in center and bottom of unit. No selective harvest buffers are required. Mitigation measures for this unit are as follows: F1, F3, F4, F5, F8, W1, W2, W10, W11, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 422

QUAD : C4-SW

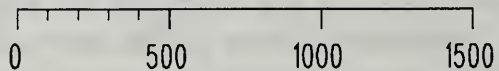


- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 593	UNIT #: 422	QUARTER QUAD: C4SW	PHOTO YR/#: 1991/1990-74
ACRES: 63.4	VOL.: 1100.9 MBF	LOGGING SYSTEM: Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is within proposed Eleven-Mile Block.			
Timber/Vegetation	Field Review: J. Miller/J. Goering 7/20/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration mostly on nurse logs and consists of hemlock and a few spruce. Slope instability/failure potential existing near the Class I stream. Some hemlock fluting evident. Heavy amount of mistletoe infection evident in canopy of western north-central portion. Split yard Class III stream buffer in the northern portion of the unit.			
Logging/Transportation	Field Review: E. DeWilde/D. Keister,	Office Review: J. Doyal	
Unit designed for both shovel and Running Skyline cable system. Partial cut is possible. Partial suspension can be achieved. A 200-500 foot buffer is on the east boundary.			
Watershed/Fisheries	Field Review: E. Ablow, 7/07/93	Office Review: T. Stewart	
Eastern side bounded by a Class I (C5 and C3) stream that has side channels and steep unstable side slopes. The stream requires a 200' buffer where channel is typed a C3 and 100' buffer where the channel is C5. Added 30 more feet to protect unstable slopes. The side slopes have both new and old debris flow slides going directly to the Class I stream. There are also many seeps and unstable side slopes. Stream 2 is a Class II, A1 stream that flows west to east into the Class I stream for 250' and then changes to a Class III, A6 stream. 15' bedrock falls are located at the channel type change. The A1 stream channel requires a 100' buffer. The A6 channel should be harvested to slope break and split yarded away from channel. Stream 3, an A1 channel that changes to an A6 channel, is the northernmost tributary that flows west to east in the unit. It is a Class III stream that requires harvest to slope break and split yarding. Areas adjacent to slope break buffers will be managed to provide a reasonable assurance for wind firmness.			
Soils/Geology	Field Review: E. Ablow, 7/07/93	Office Review: T. Stewart	
The eastern side of the unit has both old and new debris avalanches, slumps and seeps. The slope is made up of loose saturated till. Requires moving the unit boundary west above the unstable slope approximately 500'. The Northeastern corner of the unit was pulled southwest away from unstable slopes and an old debris avalanche.			
Wildlife	Field Review: H. Sloan, 7/07/93	Office Review: M. Hall	
Bear and deer sign/use evident. Level 1 structure retention. Goshawk survey conducted - no detections. 7/08 dawn murrelet survey conducted - presence behavior detected. Bald eagle observed and heard over unit (fly-over). Recommend eagle nest survey prior to layout.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 424

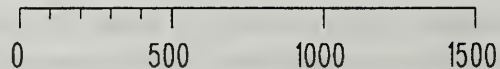
QUAD : C4-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstroto
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes
- Chonnel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 593	UNIT #: 424	QUARTER QUAD: C4SW	PHOTO YR/#: 1991/1990-78
ACRES: 103.8	VOL.: 1734.2 MBF	LOGGING SYSTEM: Slackline/Shovel	
LANDSCAPE ZONE: Unit is within Eleven Mile Block.			
Timber/Vegetation	Field Review: B. Hasebe/J. Goering,	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Fairly dense understory vegetation. Windthrow damage evident throughout the unit - heavy in places. Good advanced regeneration (candidate for release) consisting of hemlock and spruce. Low to moderate amounts of mistletoe infection evident in canopy and regeneration. Riparian soils present in the southeast portion with high amounts of salmonberry. Harvest all mistletoe infected hemlock and cut infected regeneration. Promote spruce/ cedar regeneration through planting.			
Logging/Transportation	Field Review: E. Urstadt/J. Herzberg	Office Review: J. Doyal	
Unit was designed for conventional yarding systems now changed to helicopter yarding. Partial cut is not recommended due to high blowdown potential. A Class I stream buffer implemented on the SW boundary.			
Watershed/Fisheries	Field Review: G. Jackson, 7/07/93	Office Review: T. Stewart	
One small stream located in southeast portion of unit identified as a Class II and requires a 100' no-cut buffer, a 50' selective cut buffer. Gentle sloping surface and outcrops of river gravel at main tributary suggest much drainage is sub-surface. Flood channel of main river requires a 200' buffer. Two other small streams on the southeast side of the unit contained coho fry and require 100' buffer. The two streams join as they flow south. Class III stream flows through the western part of the unit roughly from northeast to southwest and requires a 100' yarding away from the slope break buffer. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: G. Jackson, 7/07/93	Office Review: T. Stewart	
Gentle slopes, stable soils. Southeast part of unit is very wet in places, but nearly flat.			
Wildlife	Field Review: C. Confer, 7/07/93	Office Review: M. Hall	
Level 1 structure retention. Surveyed for goshawks - No response. Surveyed for murrelets-presence detected. Woodpecker feeding cavity(ies) identified. Great horned owl heard in unit.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Type E overstory removal. Retain <15"DBH trees to maintain structure and release understory. Remove all mistletoe infected trees. Mitigation measure for this unit are as follows: F1, F3, F4, F5, F6, F8, F10, W1, W2, W10, R1. Unit boundary modified after field layout to exclude unstable MMI4 slopes newly mapped on the east side adjacent to Class buffer and south end of unit. Recommend eagle nest survey prior to final layout.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 593

UNIT : 431

QUAD : C4-NW



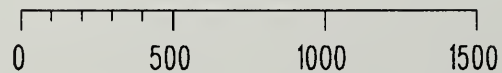
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

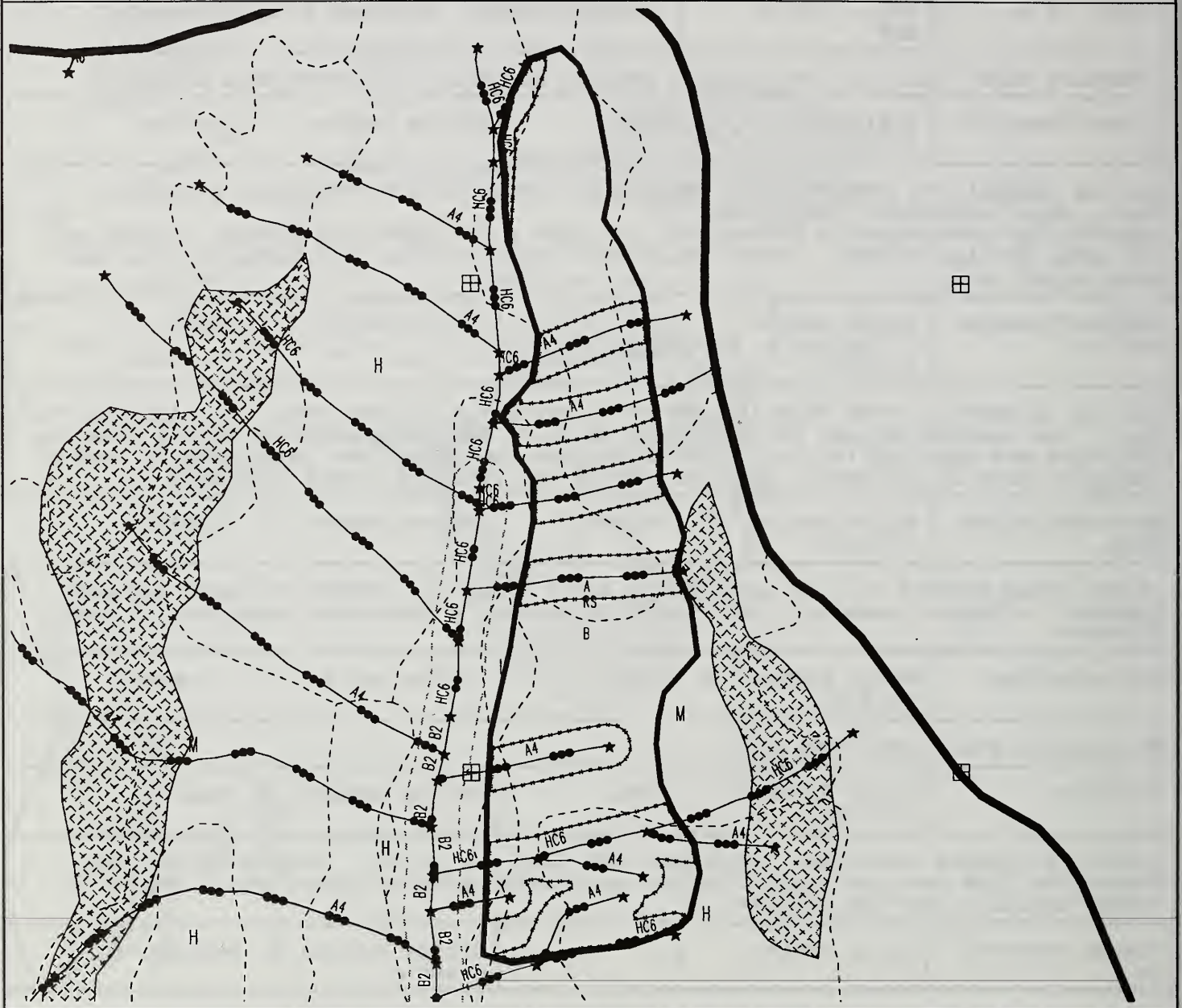
VCU #: 593	UNIT #: 431	QUARTER QUAD: C4NW	PHOTO YR/#: 1991/1990-76
ACRES: 22.9	VOL.: 221.2 MBF	LOGGING SYSTEM: Highlead with 70' Tower	
LANDSCAPE ZONE: Unit is just outside eastern boundary of Eleven-Mile Block.			
Timber/Vegetation	Field Review: T. Stecher, 7/21/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Fairly dense understory vegetation. Regeneration predominantly hemlock but includes a few cedar and spruce. Alaska yellow cedar decline evident. Steep relatively shallow soils, and poor soil drainage areas within unit.			
Logging/Transportation	Field Review: J. Spolar/B. Wilkinson, 7/30/93	Office Review: J. Doyal	
Unit is accessed by Road #2051400 and three spurs. A 70 foot tower can highlead this unit. One hundred percent of yarding is uphill. Partial suspension is not possible. Tie-backs are expected for tailholds throughout the unit. Two landings will need alternative guys or tie-backs. Partial cut is not feasible. Fair economics.			
Watershed/Fisheries	Field Review: R. Rogers, 7/19/93	Office Review: T. Stewart	
Slope break buffers will be implemented along Class III streams on north and east boundary, adjacent areas will be treated to provide a reasonable assurance of wind-firmness.			
Soils/Geology	Field Review: R. Rogers, 7/19/93	Office Review: T. Stewart	
No unstable soil conditions noted.			
Wildlife	Field Review: H. Sloan, 7/19/93	Office Review: M. Hall	
Level 1 structure retention. High bear and deer use in unit. Possible bear den. Woodpecker feed cavities identified and woodpecker audible detections. Cruiser detected possible bear den (Plot 6).			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in Middleground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Directional fall trees away from Class III streams on north and east boundary. Type A clearcut. Mitigation measures for this unit are as follows: F1,F5,F8,W1,W5,W10,R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 401

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

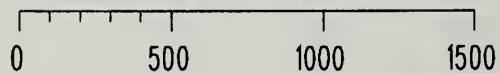
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes

★ Channel Type Change

April 22, 1998

Scale in Feet



CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 401	QUARTER QUAD: C4NE	PHOTO YR/#: 1971/1272-85
ACRES: 49.7	VOL.: 873.2 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Kogish Mountain Corridor			
Timber/Vegetation	Field Review: G. Hedin, 7/8/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Rocky, steep, relatively thin soils and exposed rock. Rock bluffs on the higher elevations of the unit. Some frost cracks present in spruce.			
Logging/Transportation	Field Review: B. Webster/T. Wetzell/G. Slawson, 7/7/93	Office Review: E. Urstadt	
A 200 foot stream buffer is on the SW boundary. The east boundary is at base of cliffs. Fair economics. Directional falling away from split yard streams may be difficult since Class III streams are close to each other. Unit is planned for helicopter logging systems.			
Watershed/Fisheries	Field Review: J. Metzler/S. Tanguay, 7/05/93	Office Review: J. Knutzen	
Stream along west boundary is Class III above 950' elevation, Class II below. Sighted numerous trout in Class II portion. Eight Class III tributaries flow through unit. The Class II stream should get a 200' buffer due to unstable slopes within 150' to 180' of channel where subsurface water emerges on a till layer. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: J. Metzler, 7/05/93	Office Review: J. Knutzen	
Bluffs with thin soils and thin trees above 1,400' elevation in the north and south part of the unit. Keep top line below bluffs. High MMI due to steep slopes and wet site. Attain at least partial suspension where slopes exceed 60%. See watershed/fisheries - small slumps in lower part of stream along west boundary due to subsurface water emerging over till layer. Keep bottom line above this by retaining a 200' buffer on stream.			
Wildlife	Field Review: S. Tanguay, 7/05/93	Office Review: M. Hall	
Bear and deer sign/use evident. Upper portion of unit had high deer browse; could lower unit boundary due to bluffs. This would provide highly utilized browsing area. Retain Level 1 structure. Contiguous old-growth.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Not seen from West Coast Waterway in Middleground, but close. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Leave (approximately 15 acre) patches/strips between Streams 2 and 3; Streams 5 and 6; and Streams 5 and 5A. 200' buffer added to lower half of mainstem stream west of unit for unstable soils. Split yard Class III streams in unit. Potential areas for independent sales due to high spruce content. Type B and D clearcut. Mitigation measures for this unit are as follows: F1, F2, F5, F6, W1, W3.

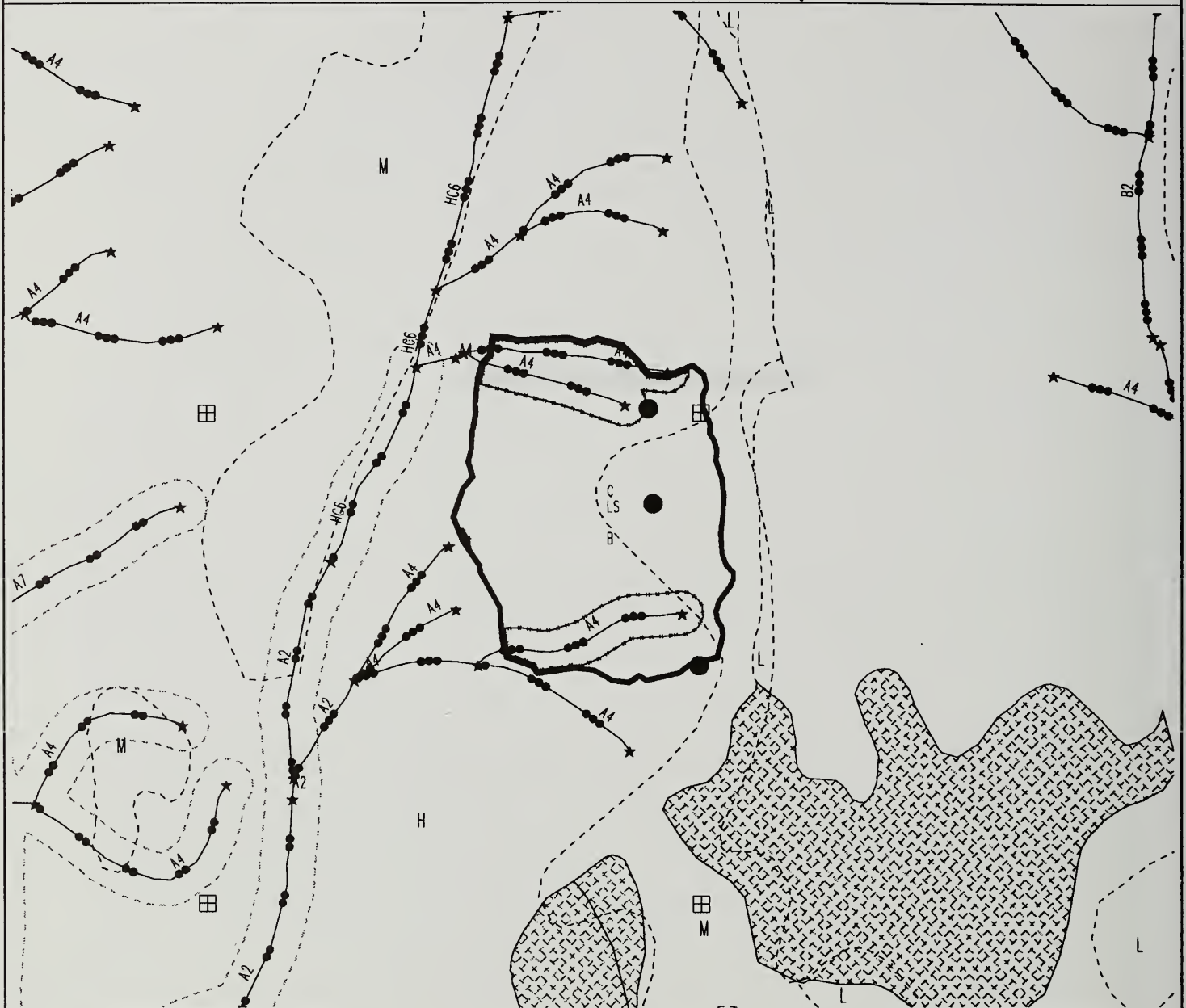
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 405

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 405	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/890-131
ACRES: 29	VOL.: 704.6 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: J. Miller, 7/7/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Windthrow damage present in northern portion of unit. Rock bluffs on the higher elevations of the unit. Steep relatively shallow soils, and poor soil drainage areas within unit. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: E. Dewilde/K. Martin/J. Spolar, 7/6/93	Office Review: E. Urstadt	
Recommend helicopter logging to provide full log suspension as requested by soil scientist. Blowdown to adjacent stand can be avoided by leaving a 50' nonmerchantable buffer along adjacent stands. Economics are good.			
Watershed/Fisheries	Field Review: B. Romey, 6/22/93	Office Review: T. Stewart	
100' buffer on Class II, Stream 1 southwest of unit (out of unit as laid out). Directional fall with full suspension on streams at north and south boundary. Split yard stream near southern tip of unit if practical (G/W).			
Soils/Geology	Field Review: M. Minnillo, 6/22/93/J. Metzler, 8/13/93	Office Review: T. Stewart	
Slopes are 40% to 60%. High MMI. Achieve full suspension on steeper slopes.			
Wildlife	Field Review: M. Minnillo	Office Review: R. Fairbanks	
Feather the north edge of unit to try and reduce windthrow after harvest. Bear and deer sign/use evident. Level 1 structure retention. Hairy woodpecker detection.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from Big Salt Lake in Middleground. Maximum Modification VQO. CVD problems?			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
100' buffer on Class II stream on west boundary. Split yard Class III streams in north. Class III stream in south of unit not split yarded due to small size and because partial suspension will mitigate water quality impact. Buffer on west stream enlarged to mitigate for unstable slopes. Achieve full suspension on steeper slopes. Type B clearcut because of blowdown potential. Logs can be flown to an existing unit in election creek. Mitigation measures for this unit are as follows: F1, F2, F3, F5, F6, F7, W1, W3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 407

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet

0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 407	QUARTER QUAD: C4NE	PHOTO YR/#: 1971/1272-86
ACRES: 22.8	VOL.: 433.6 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit in the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: J. Miller, 7/10/93	Office Review: J. Goering	
Species composition includes hemlock, spruce, and cedar. Regeneration includes hemlock, cedar, and spruce. Many V-notched streams. Split yard streams. Steep relatively shallow soils, and poor soil drainage areas within unit.			
Logging/Transportation	Field Review: J. Doyal/ J. Herzberg/K. Keister, 7/28/93	Office Review: E. Urstadt	
Recommend helicopter logging due to difficult road construction and logging systems difficulties. Logs can be flown to the end of road 2049100 in unit 594-415. A 100 foot buffer is on the east side. The western boundary is below rock bluffs. Feather edges to reduce blowdown potential. Fair economics. Recommend a road south to Sealaska.			
Watershed/Fishes	Field Review: J. Metzler/S. Tanguay, 7/03/93	Office Review: T. Stewart	
Unit is bounded by Class III streams on north and south sides. Two other Class III streams flow northwest-southeast across middle of unit. Streams mostly in bedrock. Cutthroat trout sighted at bottom of main stream, below unit. Numerous trout also sighted in Class II stream east of unit. Slope break buffers will be implemented along Class III streams within and adjacent to unit, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: J. Metzler, 7/03/93	Office Review: T. Stewart	
Steep slopes in upper portion of unit; some pistol-butted trees, poorly drained soils, but no other indicators of instability. Bluffs above 1500' with shallow soils, non-merchantable trees should be excluded from unit. Achieve partial suspension where slopes are greater than 60%.			
Wildlife	Field Review: S. Tanguay, 7/03/93	Office Review: M. Hall	
Much deer forage, minimal wildlife sign observed. Buffer lower muskegs by bringing unit boundary away from scrubby timber. Contiguous old-growth; retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Recommend Type B clearcut with logging system. Boundary lowered below 1500 foot elevation. Split yard two Class III streams. Streams along unit boundaries also need split yarding on the unit side. Unit not laid out within 100 feet of Class II stream at east. Opportunity to connect with Sealaska road system. Mitigation measures for this unit are as follows: F2,F2,F3,F5,F6,F7,F10,W1,W3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 409

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet
0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

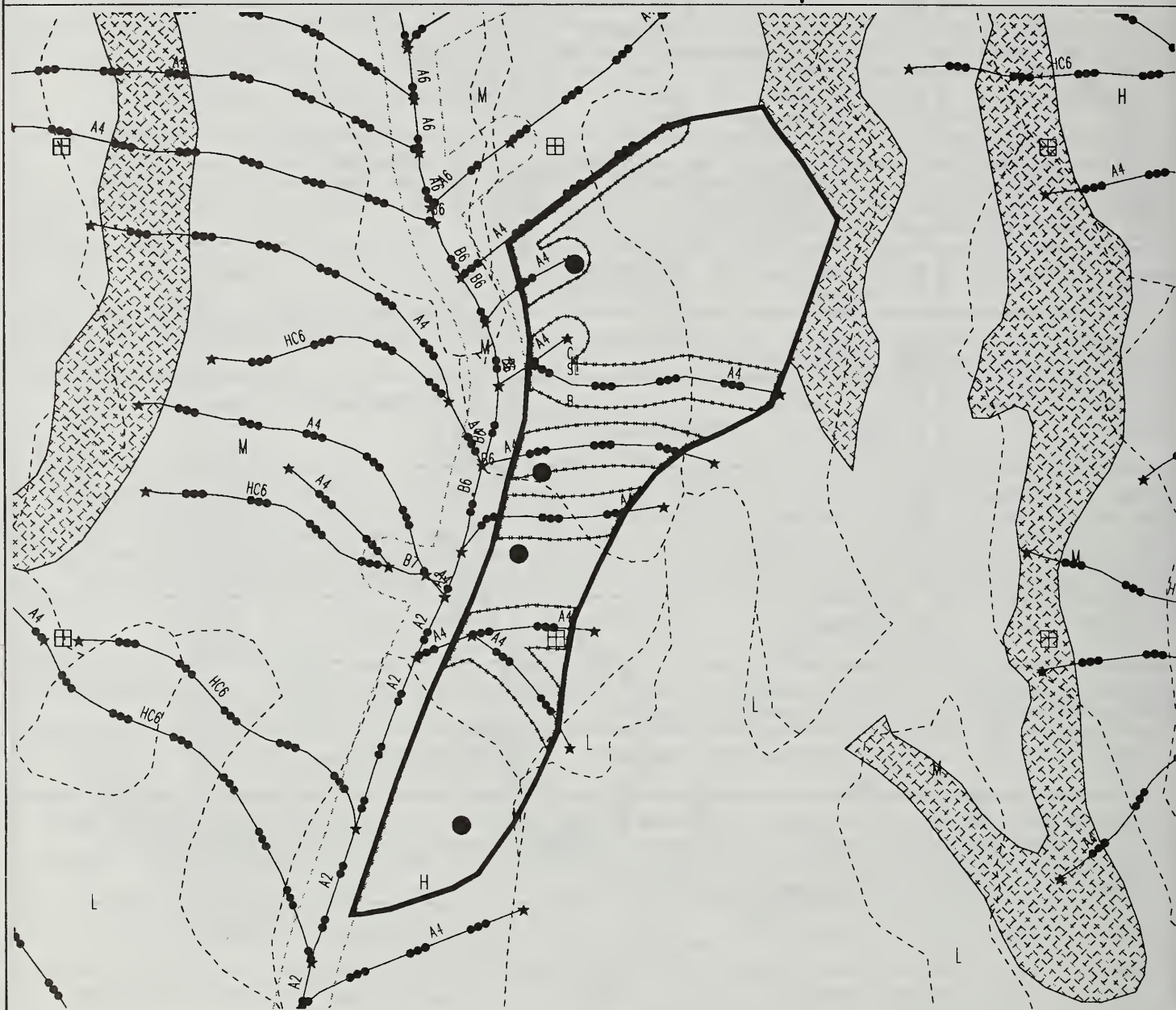
VCU #: 594	UNIT #: 409	QUARTER QUAD: C4NE	PHOTO YR/#: 1991/1190-130
ACRES: 70.0	VOL.: 1745.9 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: G. Hedin, 7/10/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Rock bluffs on the higher elevations of the unit. Steep, rocky relatively shallow soils. Many Class III stream drainage's within unit.			
Logging/Transportation	Field Review: B. Wilkinson/ T. Wetzler/G. Stone, 7/08/93	Office Review: C. Barnhart, 7/30/93	
Recommend helicopter yarding using landings in unit 594-415, Road #2049100. 100' TTRA buffer on west boundary of unit.			
Watershed/Fisheries	Field Review: J. Metzler/S. Tanguay, 7/05/93	Office Review: J. Knutzen	
Class II stream with two side channels that were observed to have fish and flagged B/W run along the west boundary. Four Class III tributaries flow through the unit and into the fish-bearing streams with lower part of one in mid unit Class II with B/W flagging. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: J. Metzler, 7/05/93	Office Review: J. Knutzen	
Bluffs throughout unit and shallow soils. Achieve full suspension where slopes are > 60% (most of unit) to minimize disturbance.			
Wildlife	Field Review: S. Tanguay, 7/05/93	Office Review: M. Hall	
Deer and bear sign/use evident. Include riparian area in corridor design; high deer use in upper portion of unit; bluff area. Propose moving unit/road above top of slope approximately 100' to maintain wildlife corridor and year-round habitat. Contiguous old-growth; retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in Middleground. Maximum Modification VQO. Provide access to alpine valley and lakes.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Northern and eastern boundaries reduced to prevent harvest on unstable soils. Type G shelterwood within south 1/2. Type B clearcut in north half. Maintain 100' buffer on Class II stream west of unit. Achieve full suspension in high slope areas. Mitigation measures for this unit are: F1,F2,F3,F5,F6,F10,W1,W3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 410

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

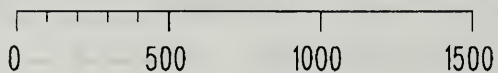
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

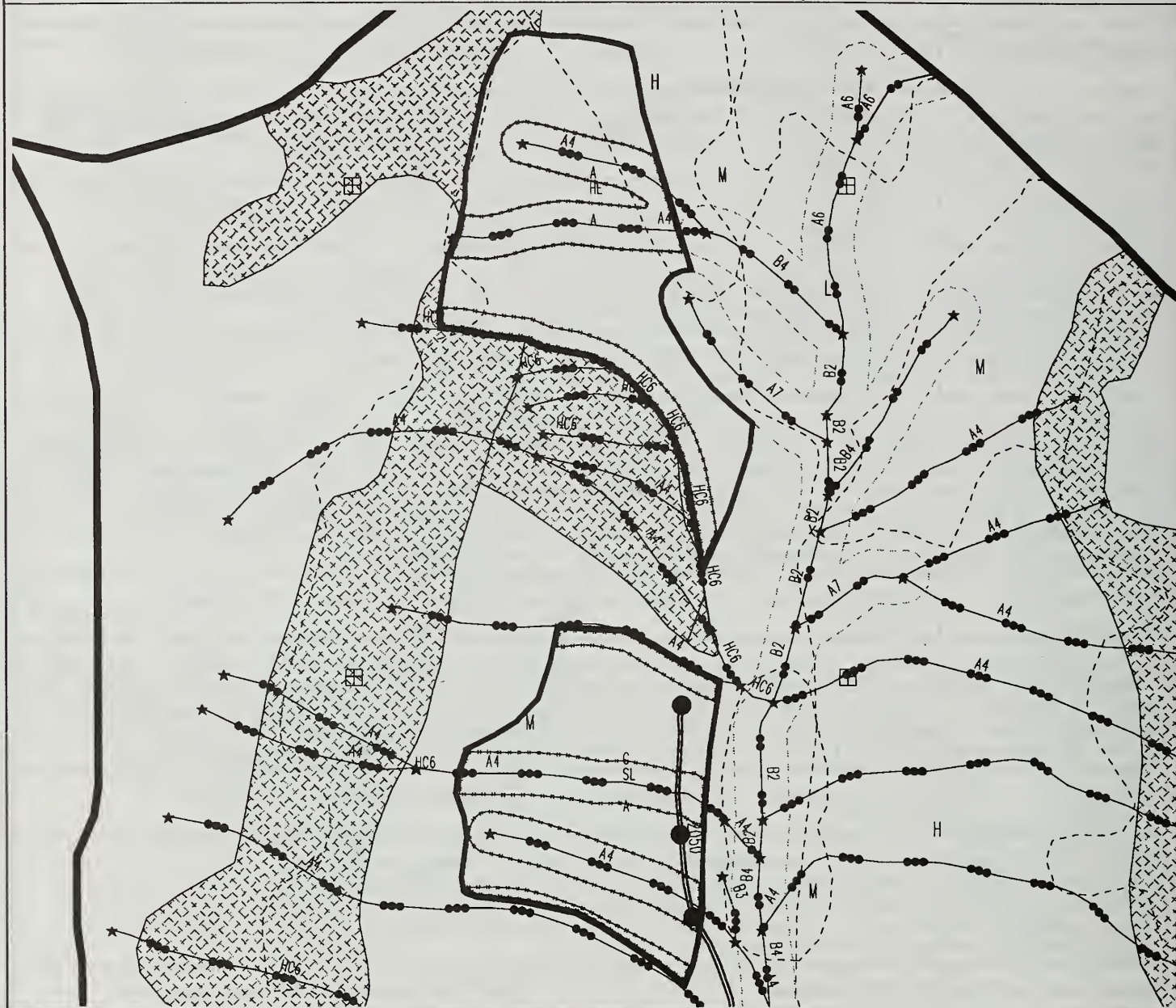
VCU #: 594	UNIT #: 410	QUARTER QUAD: C4NE	PHOTO YR/#: 1971/1572-117
ACRES: 52.9	VOL.: 694.2 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: T. Stecher, 7/15/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock with some spruce but is lacking cedar. Rock bluffs and boulder strewn slopes present.			
Logging/Transportation	Field Review: J. Graves/J. Doyal, 7/15/93	Office Review: M. Whitty	
Road was attempted, however poor grades, difficult construction, extreme side slopes and resource concerns led to the dropping of the road. The east boundary is a 100 foot stream buffer. Avoid slides in the SW unit. Fair economics.			
Watershed/Fisheries	Field Review: J. Metzler, 7/08/93	Office Review: T. Stewart	
Six Class III streams flow through the unit into a deeply incised Class II stream along the western edge of the unit. The Class III streams should be split yarded and northernmost stream should be used as the northern unit boundary. The western unit boundary should be located on the topographic break above the Class II stream (100' to 300' away). The inner gorge of this stream is very steep with bedrock outcrops. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: J. Metzler, 7/08/93	Office Review: T. Stewart	
Some instability evident along western boundary associated with fault zone. This will be avoided by locating the western unit boundary along the topographic break above the Class II stream. The northern boundary should be kept south of Stream 1 to exclude a bluff/wet area. Numerous short, broken bluffs throughout the eastern half of the unit but no evidence of instability. Achieve partial suspension where slopes > 60%			
Wildlife	Field Review: S. Tanguay, 7/09/93	Office Review: M. Hall	
Game trails throughout unit; moderate to high deer browse observed. The main stream at the west boundary would be a consideration for landscape corridor. The incision and steep slopes preclude timber harvest this corridor. Low wildlife sign in unit. Muskeg complex above unit. Lower end of unit may potentially be large riparian corridor. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type G shelterwood in south 1/3. Type B clearcut in north 2/3. Potential problem with split yarding southern fork of stream in lower portion of unit. Eastern boundary moved west to avoid unstable soils. Western boundary buffered at least 100' for TTRA buffer and steep unstable slopes. Mitigation measures for this unit are: F1, F2, F3, F5, F6, F7, F8, F10, W1, W2, W3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 411

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- ★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 411	QUARTER QUAD: C4NE	PHOTO YR/#: 1991/1290-18
ACRES: 51.3	VOL.: 1024 MBF	LOGGING SYSTEM: Slackline with 100' Tower (South), Helicopter (North)	
LANDSCAPE ZONE: Unit is within the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: M. Case, 7/19/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock with some spruce but is lacking cedar. Steep, rocky relatively shallow soils, and poor soil drainage areas within unit. Some areas of moderately low volume, mixed species with < 50% canopy closure.			
Logging/Transportation	Field Review: E. DeWilde/C. Giles/D. Keister, 7/17/93	Office Review: C. Barnhart	
Unit is accessed by Road #2050. This road could not be extended to the north due to grade restrictions. Recommend a 100 foot tower with slackline system on south setting. Recommend helicopter logging north setting. Partial suspension is possible on cable settings. Tailholds are poor on the west boundary and tie-backs will be needed. Partial cut is not feasible due to steep slopes. A 100 foot stream buffer is the east boundary. The central part of the unit was excluded due to unstable soils. Fair to poor economics.			
Watershed/Fisheries	Field Review: J. Metzler/S. Tanguay, 7/6/93	Office Review: T. Stewart	
Numerous shallow to deeply incised V-notches flow east through unit to a Class II stream at bottom of slope. Class II stream requires a 100' buffer. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness. Retention of non-merchantable trees within 70' of Stream 3 is also required to retain root strength along this stream which has experienced a debris flow. The unit boundary should be kept west of Stream 4 to avoid a very wet, floodplain area.			
Soils/Geology	Field Review: J. Metzler, 7/6/93	Office Review: T. Stewart	
Steep slopes with bluffs along the top boundary. Achieve at least partial suspension where slopes > 60% to minimize soil disturbance. Central portion of unit has been deleted due to very high MMI - extremely wet, high V-Notch density, debris flows, and bluffs.			
Wildlife	Field Review: S. Tanguay, 7/06/93	Office Review: M. Hall	
Heavy deer use in lower unit. Neotropical migrants observed in MMI deletion area. Attempt to leave Class II stream and adjacent footslopes out of units for wildlife corridor. Steep V-notch channels mid-slope act as movement barrier. Contiguous old-growth; retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Type A clearcut in south setting. Type C clearcut in north helicopter setting (411B). Maintain 100' buffer on Class II stream. MMI4 excluded from unit. Maintain 100' buffer on Class II stream east boundary. Retain non-merchantable trees within 70' of stream in middle of setting A. Mitigation measures for this unit are: F1, F2, F3, F4, F6, F6, F7, F8, F10, W1, W3, W5, W10, R1.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 412

QUAD : C4-NE



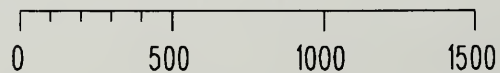
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

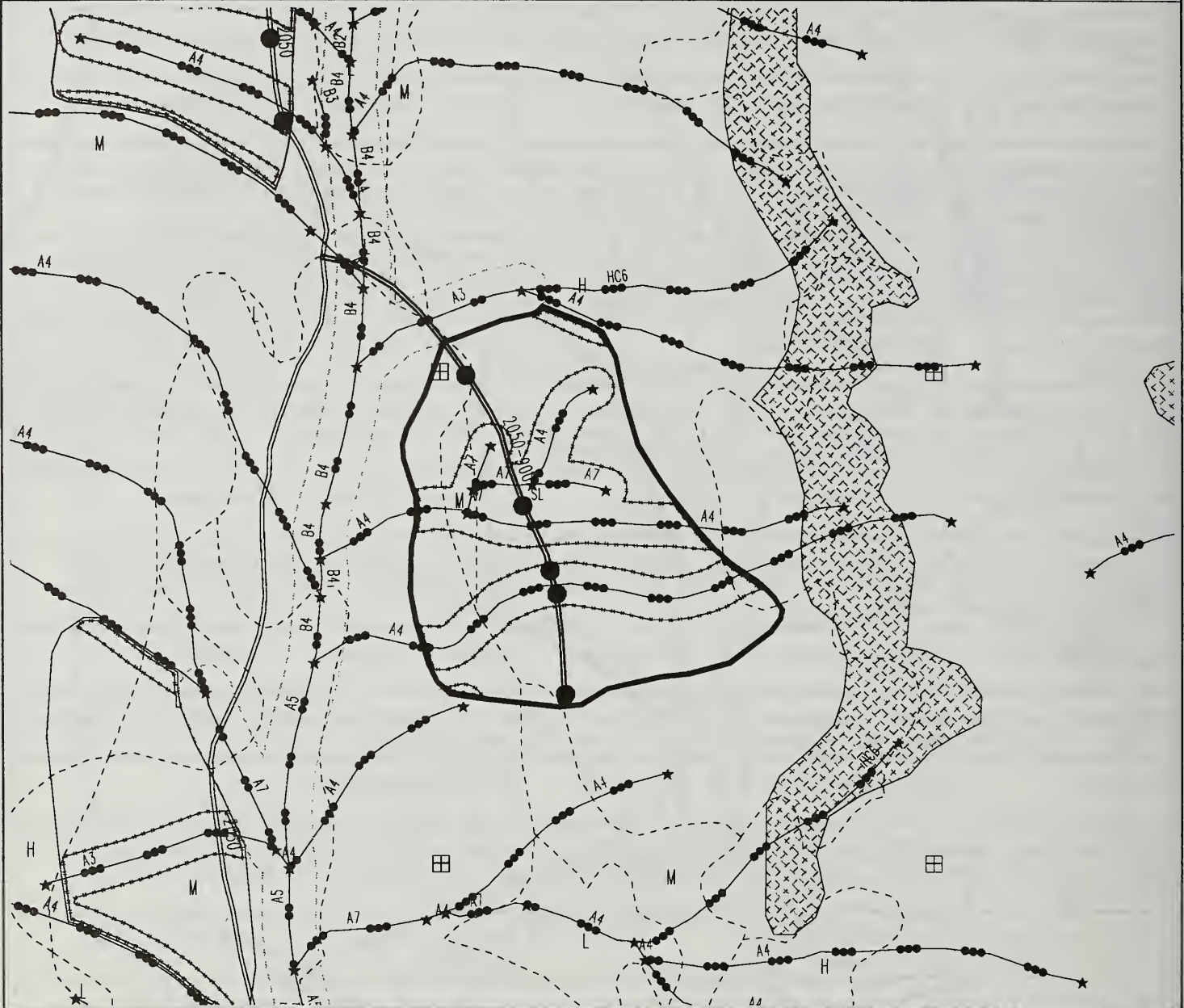
VCU #: 594	UNIT #: 412	QUARTER QUAD: C4NE	PHOTO YR/#: 1971/1072-213
ACRES: 20.4	VOL.: 415.7 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is north of Big Salt Lake, but outside the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: B. Hedin, 7/16/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock but includes a few cedar and spruce. Shallow soils overlying bedrock. Rock bluffs on the higher elevations of the unit. Little to no mistletoe evident in canopy. Fairly dense understory vegetation. Slope instability/failure potential existing due to shallow soils, and poor soil drainage in western portion. Western portion contains moderately low volume, mixed species with < 50% canopy closure. Many small seeps, and poor soil drainage areas.			
Logging/Transportation	Field Review: H. Wilcox/C. Giles, 7/14/93	Office Review: C. Barnhart	
Unit is accessed by Road #2051000. Recommend a swing yarder. Run more profiles during final layout to confirm that partial suspension can be achieved. The east boundary is a 100 foot stream buffer. Good economics.			
Watershed/Fisheries	Field Review: B. Rogers, 7/05/93	Office Review: T. Stewart	
Unflagged, incised channel present. Slope break buffers will be implemented along class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: M. Minnillo, 7/05/93	Office Review: T. Stewart	
Recommend moving upper (western unit boundary) down to 1200' to avoid 100% or greater slopes. Achieve partial suspension due to wet, steep slopes.			
Wildlife	Field Review: M. Minnillo, 7/05/93	Office Review:	
High use deer cover/forage throughout unit. Soils recommendation to maintain west unit boundary. Below 1,200' will maintain high use deer habitat. Retain Level 2 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Boundary moved below 1,200' elevation. Class II on east side requires 100' buffer. Leave small leave islands of difficult timber along interior boundary creeks. Recommend Type B clearcut for Level 2 structure. Achieve maximum possible partial suspension. Mitigation measures for this unit are: F1,F3,F4,F5,F6,F7,F8,F10,W1,W4,W10,R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 413

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

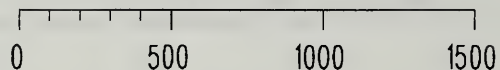
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 413	QUARTER QUAD: C4NE	PHOTO YR/#: 1991/1290-17
ACRES: 36.9	VOL.: 1135.8 MBF	LOGGING SYSTEM: Slackline, Live Skyline	
LANDSCAPE ZONE: Unit is north of Big Salt Lake, but outside the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: B. Hasebe, 7/17/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Rock bluffs on the higher elevations of the unit. Steep relatively shallow soils, and poor soil drainage areas within unit. Slope instability/failure potential existing due to poor soil drainage. Evidence of previous slides present. Western portion has moderately low volume yellow cedar and mixed species with <50% canopy closure.			
Logging/Transportation	Field Review: E. DeWilde/D. Keister, 7/10/93	Office Review: J. Doyal	
Unit is accessed by Road #2050. Recommend a 100 foot tower with slackline capability. Ninety percent is downhill logging. Partial suspension can be achieved. The east boundary avoids unstable soils and bluffs. Partial cut is not practical because of downhill logging. Blowdown is a concern. Good economics.			
Watershed/Fisheries	Field Review: J. Metzler/S. Tanguay, 7/02/93	Office Review: T. Stewart	
Numerous small, Class III streams within the unit that flow into a Class II downstream of the unit. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind-firmness. The stream along the north boundary has experienced a debris flow in the past. It spreads into several channels below 1,200' elevation where lower gradient. Keep north unit boundary at least 25' to south.			
Soils/Geology	Field Review: J. Metzler, 7/02/93	Office Review: T. Stewart	
Numerous short, broken bluffs throughout unit especially above 1,400' elevation. Shallow soils on bluffs; put top line below as shown on topographic map. Achieve at least partial suspension on high MMI soils found throughout unit.			
Wildlife	Field Review: S Tanguay, 7/02/93	Office Review: M. Hall	
Moderate deer use. Low bear use. Woodpecker cavities observed in unit. Recommend buffer on unproductive old-growth and muskeg east of unit by keeping unit boundary to west of scrub. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Boundary placed below bluffs. Maintain 100' buffers on Class II unit at north end. Achieve partial suspension on unit. Retain area uphill from Streams 2, 3, and 5. Type A harvest. Mitigation measures for this unit are: F1,F3,F4,F5,F6,F7,F8,F10,W1,W5,W10, R1.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 415

QUAD : C4-NE



- Revised Control Lake Project Boundary
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- Eagle Tree Buffer of 330ft
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- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
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- McGilvery > 41
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Scale in Feet
0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 415	QUARTER QUAD: C4NE	PHOTO YR/#: 1991/1190-131
ACRES: 82.1	VOL.: 2175 MBF	LOGGING SYSTEM: Live Skyline with 70' Tower/Highlead	
LANDSCAPE ZONE: Unit is within the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: M. Case/J. Goering, 7/13/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Predominantly hemlock regeneration. Lacking spruce and western red cedar regeneration. Windthrow damage evident throughout the unit in areas of thin soils and rock outcrops. Areas of shallow soils overlying bedrock. Rocky soils and poor soil drainage areas within unit. Rockslides present in the southern half. Muskeg incursions incorporated with mixed species, low volume timber along the eastern boundary. Northern half consists of a short slope with unproductive area above and below. Road bisects small productive site. Relocate road to minimize loss to site productivity.			
Logging/Transportation	Field Review: J. Doyal/J. Herzberg/D. Keister, 7/12/93	Office Review: E. Urstadt	
Unit is accessed by Road #2049000. An alternate was tried at the top of the unit but it lacked adequate landings. Recommend using a 70 foot tower using shotgun and highlead systems. The center of the unit lacks an adequate landing; a swing yarder may work here. Partial suspension is possible on the eastern settings. Tailholds on the east and west boundaries may require tie-backs. Fair economics. Look at possibility of a road connecting to Sealaska road system to the south.			
Watershed/Fisheries	Field Review: B. Romey, 7/03/93	Office Review: T. Stewart	
Stream east of unit is a Class 1, 100' buffer. Streams 2, 3, and 4 are water quality Class III. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: M. Minnillo, 8/14/93	Office Review: T. Stewart	
There was no evidence of instability, however steep slopes > 60% will require partial suspension (eastern half of unit primarily).			
Wildlife	Field Review: M. Minnillo, 8/14/93	Office Review: R. Fairbanks	
Recommend maintaining eastern unit boundary above (to the west of) muskeg to maintain edge cover along riparian zone and muskeg. Recommend leaving a corridor through the middle of unit along stream approximately 100' to 200' wide from the east to the west side of unit. This would provide a travel corridor from lower elevation to higher elevation muskeg/alpine. Retain Level 1 structure. Two brown creepers observed within unit boundary.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Achieve partial suspension on slopes > 60%. Leave 100' no-cut buffer on both sides of Class III stream through middle of unit to maintain travel corridor from lower to higher elevation. Relocate road in north half. Type B and D clearcut. Mitigation measures for this unit are: F1,F3,F4,F5,F6,F7,F8,W1,W4,W10,R1.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 416

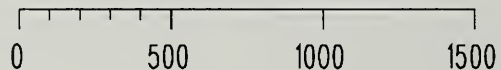
QUAD : C4-NE



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- MMI 4
- McGilvery > 41
- Landings
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Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 416	QUARTER QUAD: C4NE	PHOTO YR/#: 1991/1190-131
ACRES: 67.0	VOL.: 1135.8 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: M. Case, 7/14/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock and cedar with a few spruce present. Predominantly hemlock regeneration.</p> <p>Good advanced regeneration (candidate for release) consisting of cedar. Rocky, relatively shallow soils, and poor soil drainage areas within unit. Windthrow damage evident throughout the unit, heavy in areas of poor soil drainage.</p> <p>Incursions of moderately low volume, mixed-species, multi-canopy areas with < 50% canopy closure.</p>			
Logging/Transportation	Field Review: T. Wetzel/G. Slawson, 7/13/93	Office Review: J. Doyal	
A 100 foot (or greater) stream buffer is on the west and south boundaries. The Class II stream buffers within the unit are not flagged. Fair economics.			
Watershed/Fisheries	Field Review: B. Romey, 7/3/93	Office Review: T. Stewart	
Streams west and northwest of unit need 100' buffers. Stream south of unit as laid out needs to be split yarded or full suspension. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: M. Minnillo, 7/03/93	Office Review: T. Stewart	
Attain full suspension in unit due to numerous seeps, windthrows and steep slopes.			
Wildlife	Field Review: M. Minnillo, 7/03/93	Office Review: R. Fairbanks	
High use riparian corridor by bear, deer, and wolves evidenced by tracks, scat, and scattered wolf-killed deer. Good cover, bedding habitat in lower north end of unit. Snags to be maintained in stream buffer. Moderate deer use in unit. Much dead and downed material throughout unit. Structure will be maintained in Class II stream buffer on west side of unit. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in middleground. Maximum Modification VQ0.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Maintain 100' buffers on Class I and II streams west and northwest of unit. Class III stream to south is now unit boundary. Harvest only to slope break. Achieve partial suspension. Windthrow concerns limit use of partial cutting. Type A clearcut. Mitigation measures for this unit are: F2, F3, F4, F5, F6, F7, F8, W1, W3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 418

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

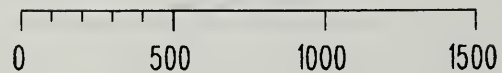
● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

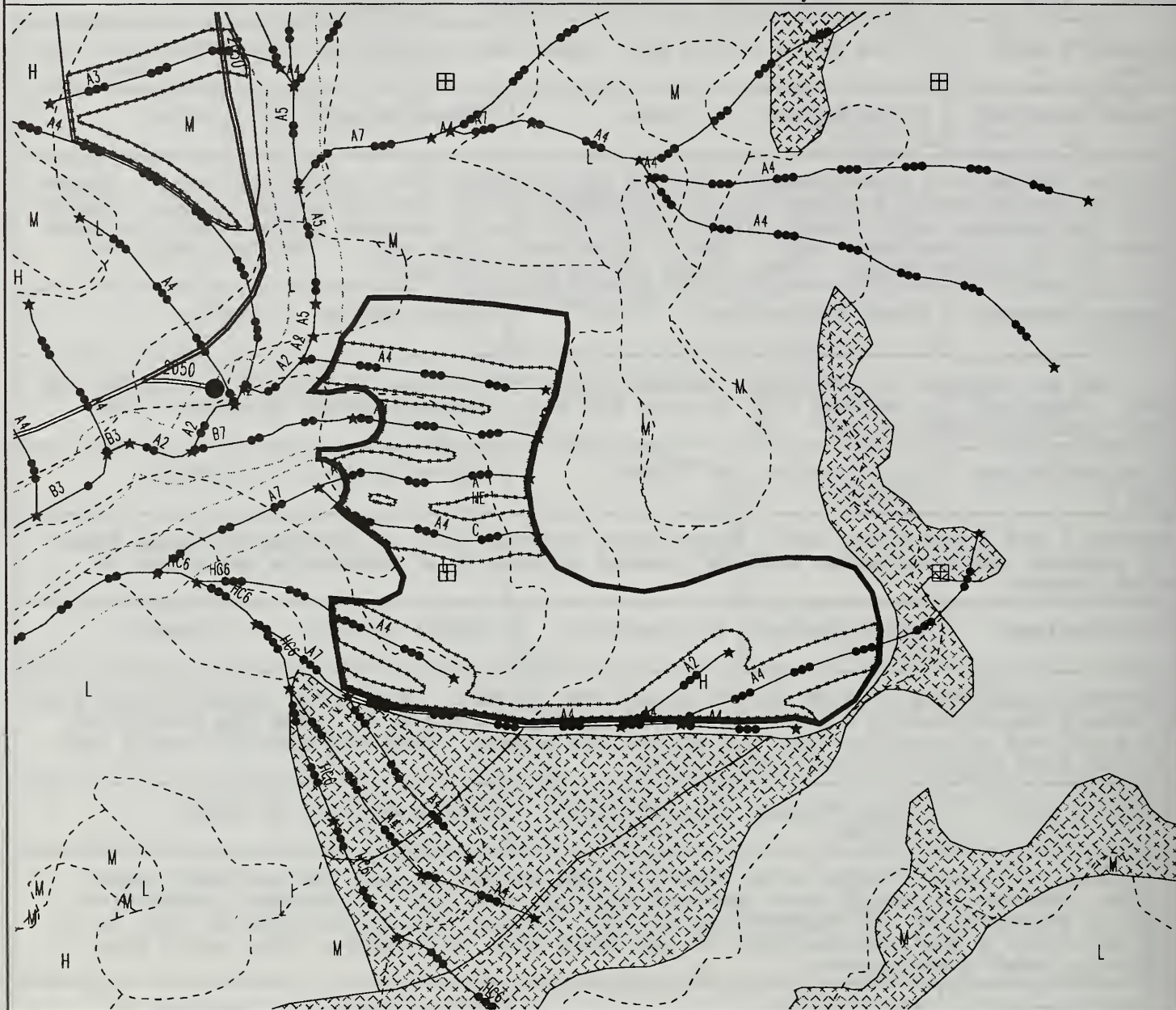
VCU #: 594	UNIT #: 418	QUARTER QUAD: C4NE	PHOTO YR/#: 1972/1290-17
ACRES: 42.6	VOL.: 733.3 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is north of Big Salt Lake, but outside the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: M. Case, 7/20/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock with a few spruce but is lacking cedar overall. Moderately low volume, multi-canopy stand with < 50% canopy closure & relatively low site productivity in southeast half. Rocky, relatively thin soils, exposed rock, and poor soil drainage areas. Steep slope in the northern half.			
Logging/Transportation	Field Review: none	Office Review: K. Jehnke	
Unit was not visited by engineers because soils specialists recommend helicopter logging. Yard unit to landing 4+31 in unit 594-417. Average flight distance = 4600 feet; average flight slope = -4%.			
Watershed/Fisheries	Field Review: R. Romey, 7/05/93	Office Review: T. Stewart	
Streams 1 and 2 are Class III. Slope break buffers will be implemented along class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: M. Minnillo, 7/05/93	Office Review: T. Stewart	
Recommend helicopter logging due to steep, wet slopes. Helicopter logging would also eliminate approximately 1.5 miles of road which would have to cross the V-Notch on the north end of unit and then cut across 90% slopes. High probability that a road in this area would wash out and/or slide.			
Wildlife	Field Review: M. Minnillo, 7/05/93	Office Review: M. Hall	
This area is heavily traveled by deer and bear moving between low and high elevations. Goshawk or cooper hawk observed circling over unit. Recommend conducting goshawk survey prior to implementing action. Delete the northern end of unit in order to retain a high use corridor on the south side of V-Notch. This would also maintain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Badross, M. Greenig	
Unit not seen from any priority travel route or use area. Unit visible from Klawock airport. Seen from West Coast Waterway in Middleground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Streams are not in unit. Directional fall where along boundary. Conduct goshawk survey prior to implementation. Type C helicopter. Mitigation measures for this unit are: F1, F2, F3, F5, F6, F7, W1, W3, W9.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 419

QUAD : C4-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 419	QUARTER QUAD: C4NE	PHOTO YR/#: 1991/1290-17
ACRES: 47.8	VOL.: 1375.6 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is north of Big Salt Lake, but outside the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: B. Hasebe, 7/15/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Low amount of regeneration overall. Little to no mistletoe evident in canopy. Rock bluffs on the higher elevations of the unit. Steep slopes, shallow soils overlying bedrock. High erosive potential in Class III stream V-notch areas. Many small seeps, streams, and poor soil drainage areas. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: E. DeWilde/D. Keister, 7/15/93	Office Review: J. Doyal	
Unit could not be accessed at maximum grades. Recommend helicopter logging to landing 139+02 in Unit 594-420. Verify landing suitability during final layout. Average flight slope = -18%. Average flight distance = 3600 feet. Fair economics.			
Watershed/Fisheries	Field Review: J. Metzler, 7/03/93	Office Review: T. Stewart	
Numerous Class III streams flow through unit. These are typically incised on the steeper slopes and poorly defined on small benches. However, they all show evidence of transporting large amounts of gravel to cobble-size material. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: J. Metzler, 7/03/93	Office Review: T. Stewart	
There is a large (natural) shallow landslide north of the unit. Bluffs with very shallow soils occur above approx. 1,400' in the northern part of the unit and should be excluded. Slopes are steep, wet, and hummocky. Achieve at least partial suspension due to high MMI. The area south of Stream 6 is very high MMI and should be excluded from the unit.			
Wildlife	Field Review: S. Tanguay, 7/03/93	Office Review: R. Fairbanks	
Moderate deer/bear use. Stay below 1,400' to 1,200' to avoid high bluffs. Retain Level 1 structure; contiguous old-growth.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Bluffs and MMI4 to south excluded from unit. Suspension achieved with helicopter logging. Type C clearcut. Mitigation measures for this unit are: F1, F2, F3, F4, F5, F6, F7, W1, W3,			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 594

UNIT : 420

QUAD : C4-NE



- Revised Control Lake Project Boundary
 Post-Field Unit Boundary w/ Setting Codes
 Other Post-Field Unit Boundaries
 USFS Timber - Volstroto
 Eagle Tree Buffer of 330ft
 Existing & Rebuilt Roads
 F.S. Roads Under Construction
 Post-Field Proposed Roads
 Class 3 Treatment Zone
 Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41
 Landings
 Stream & Lake NoCUT Buffers
 Ahmu-Class 1 & Stream Chontypes
 Ahmu-Class 2 & Stream Chontypes
 Ahmu-Class 3 & Stream Chontypes

Scale in Feet

April 22, 1998

★ Channel Type Change

Scale in Feet

0 500 1000 1500

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 594	UNIT #: 420	QUARTER QUAD: C4NE	PHOTO YR/#: 1971/1072-213
ACRES: 91.0	VOL.: 2285.6 MBF	LOGGING SYSTEM: Slackline with 70' Tower	
LANDSCAPE ZONE: Unit is north of Big Salt Lake, but outside the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: B. Hasebe, 7/14/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar. Few spruce are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Fairly dense understory vegetation. Presently lacking regeneration overall due to closed canopy. Alaska yellow cedar decline evident. Steep slopes, shallow soils overlying bedrock. Numerous V-notches intersecting unit. Little to no mistletoe evident in canopy. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: E. Dewilde/D. Keister, 7/13/93	Office Review: E. Urstadt	
Unit is accessed by Road #2050. A 70 foot tower with slackline capability is recommended. Partial suspension can be achieved. The south-central finger should be excluded due to poor timber. The north boundary has been placed below bluffs. The SE boundary has a 100 foot stream buffer.			
Watershed/Fisheries	Field Review: B. Romey, 7/13/93	Office Review: T. Stewart	
Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness. The stream south of unit requires a 100' buffer. Many debris chutes. Logjam on Class I stream forms a potentially complete barrier to anadromous fish. Easy removal potential. Good habitat upstream.			
Soils/Geology	Field Review: M. Minnillo, 7/05/93	Office Review: T. Stewart	
Partial suspension required due to steep, wet, unstable slopes. Split yard four major V-Notches within unit (see map).			
Wildlife	Field Review: M. Minnillo, 7/05/93	Office Review: M. Hall	
Leave a travel corridor in center of unit where proposed unit boundary is narrowest (see map). Windthrow does not seem to be a problem in this area. High use deer forage/cover area along top and bottom of unit. Corridor would allow ease of travel between low elevation riparian and high elevation alpine. Contiguous old-growth; retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from West Coast Waterway in middleground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

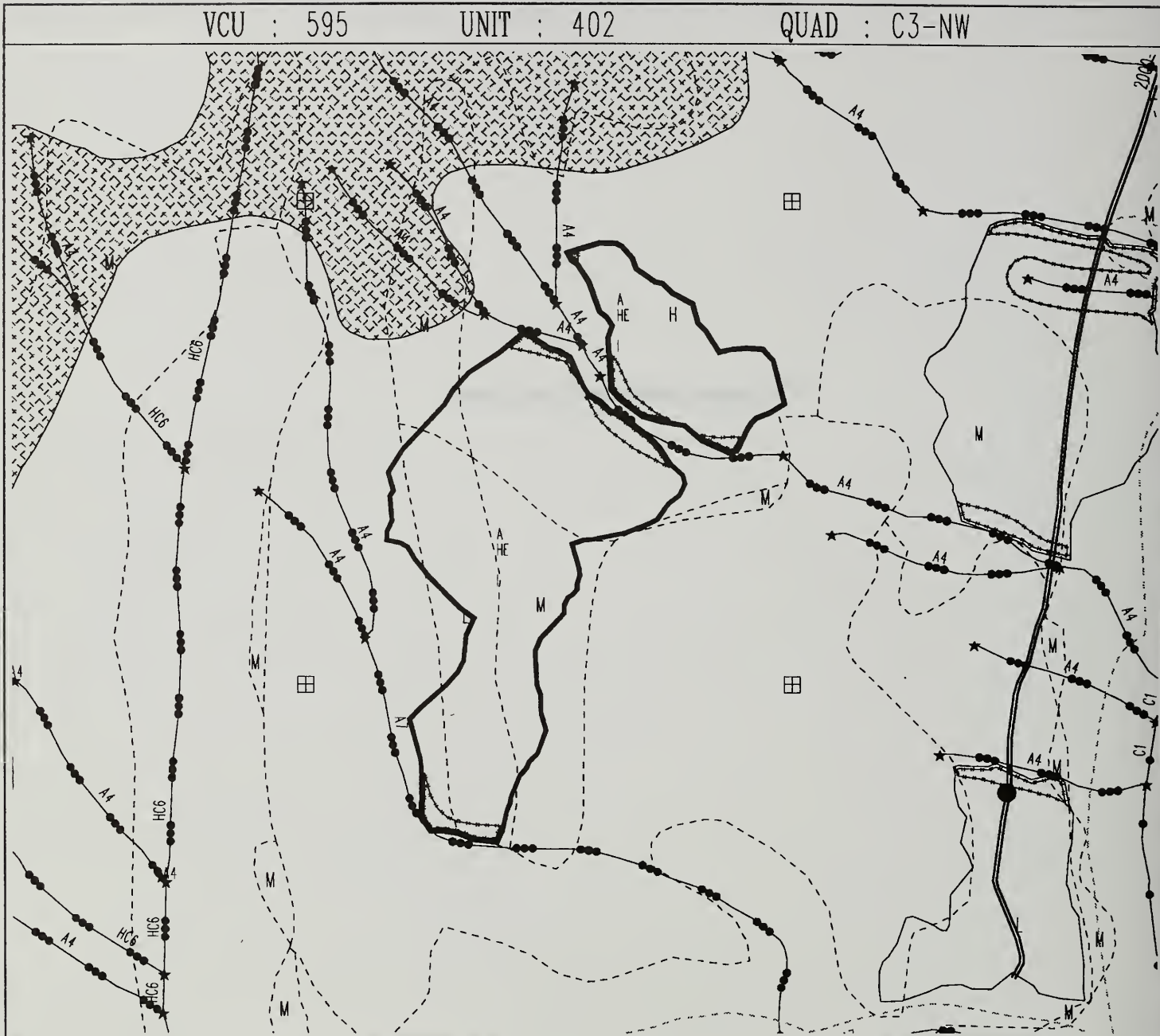
Leave strip on Class II stream - 100' on each side. Leave windfirm trees. Type A clearcut in remainder of unit. Possible splityarding problems in settings B, C, and D. Setting added in office and setting A boundary moved east to stream. Logjam on Class I stream to southeast of unit has easy removal potential and good habitat upstream. Mitigation measures for this unit are: F1, F3, F5, F6, F7, F8, F10, F11, W1, W5, W10, R1.










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




CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD




UNIT : 402

QUAD : C3-NW



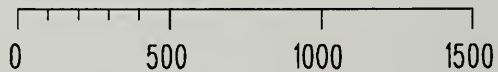
-  Revised Control Lake Project Boundary
 Post-Field Unit Boundary w/ Setting Codes
 Other Post-Field Unit Boundaries
 USFS Timber - Volstrato
 Eagle Tree Buffer of 330ft
 Existing & Rebuilt Roads
 F.S. Roads Under Construction
 Post-Field Proposed Roads
 Class 3 Treatment Zone

-  Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41
 Landings
 Stream & Lake NoCUT Buffers

-  Ahmu-Class 1 & Stream Chontypes
 Ahmu-Class 2 & Stream Chontypes
 Ahmu-Class 3 & Stream Chontypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 402	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/1990-37
ACRES: 38	VOL.: 551.4 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within the Ball's Lake Corridor.			
Timber/Vegetation	Field Review: M. Case, 7/2/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock but includes some cedar and spruce. Windthrow damage evident throughout the unit. Generally steep slopes.</p> <p>Low volume, mixed-species, multi-canopy stand with < 50% canopy closure in the northeastern portion. Fairly dense understory vegetation.</p>			
Logging/Transportation	Field Review: M. Whitty/J. Graves, 7/07/93	Office Review: C. Barnhart	
<p>Road was attempted, however, poor grades, difficult construction and poor landing locations led to the dropping of the road. The scattered nature of the timber and poor road feasibility led us to recommend helicopter yarding to a landing on Road 71-82-24 in Unit 595-403. Average flight slope is 22% downhill; average flight path is 4500 feet.</p>			
Watershed/Fisheries	Field Review: S. Tanguay, 6/28/93	Office Review: T. Stewart	
<p>Four highly incised channels at northwest of unit need full suspension. These merge into one stream flowing northwest to southeast through middle of unit. Helicopter logging suggested above 120'. Channels have high sediment load and begin to braid at footslope. Slope break buffers will be implemented along class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.</p>			
Soils/Geology	Field Review: M. Minnillo, 6/28/93	Office Review: T. Stewart	
<p>Recommend helicopter logging above 1,200' due to steep, wet slopes. Recommend partial suspension in northern portion of unit to help reduce disturbance to series of braided Class III channels.</p>			
Wildlife	Field Review: M. Minnillo, 6/28/93	Office Review: R. Fairbanks	
<p>Selectively harvest with helicopter the northern portion of unit (above 1,200') taking everything bigger than 15" DBH. Leave as many snags as are feasible. High deer use. Murrelet dawn survey conducted - presence confirmed. Woodpecker heard. Muskeg along east boundary. Retain Level 2 structure due to surrounding naturally fragmented matrix.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
<p>Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO. Seen from Big Salt Lake in Middleground. Scenic Viewshed LUD. Partial Retention VQO.</p>			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			

Recommend Type I group selection due to clumped nature of larger trees and windthrow potential in this lower volume stand where structure is desired. Helicopter log because of infeasible road cable systems unsuited for the topography, number of split yard streams, and need for suspension. Split yard streams. Maintain full suspension adjacent to Class III braided streams in north end of unit. Mitigation measures for this unit are F1, F2, F3, F4, F5, F6, F7, W1, W3.

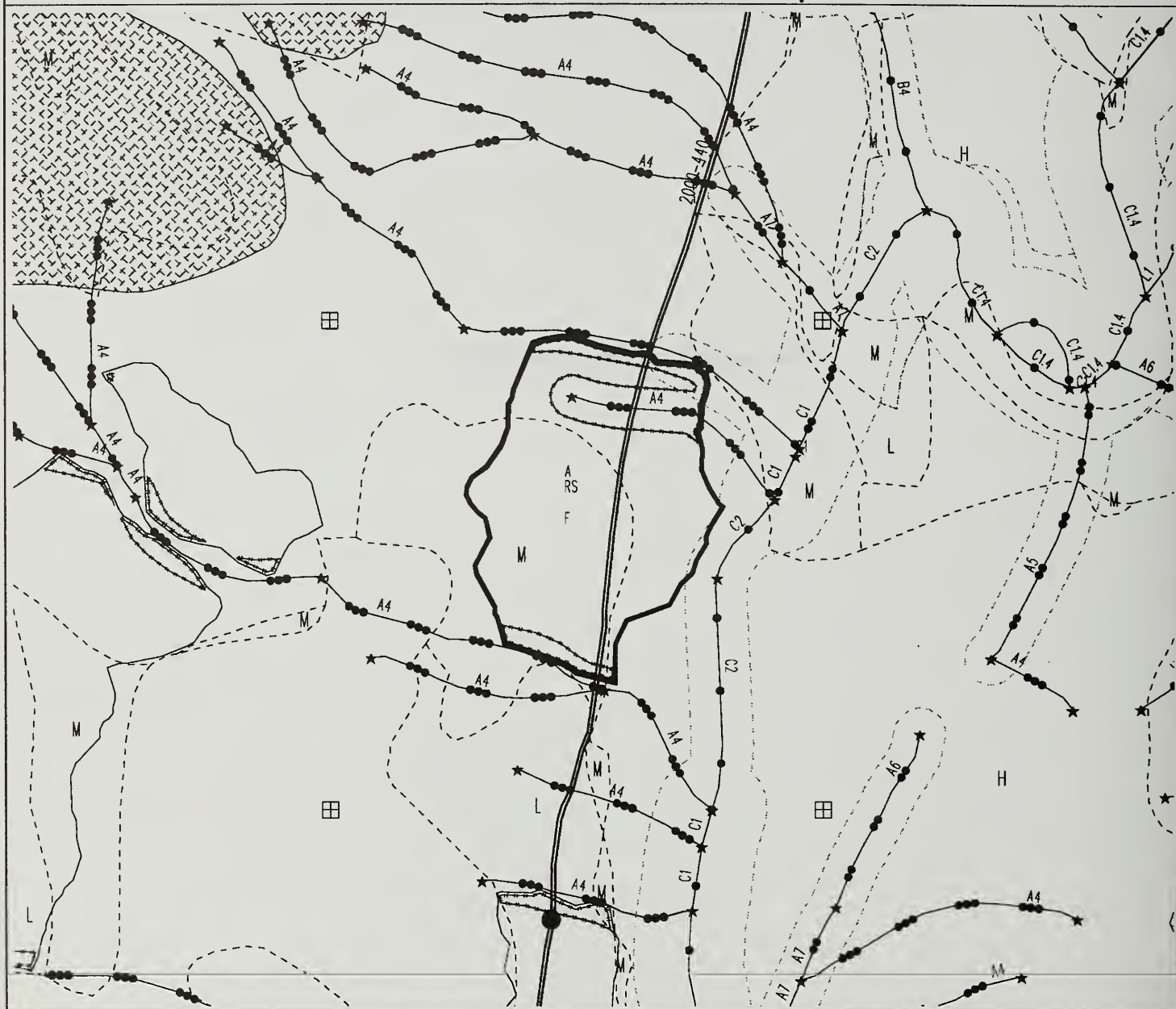
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 403

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 403	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-38
ACRES: 23	VOL.: 709.3 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is within the Ball's Lake Corridor.			
Timber/Vegetation	Field Review: G. Hedin, 7/1/93	Office Review: M. Whitty	
Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Some thin soil, extensive poor soil drainage areas. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: M. Whitty/J. Graves, 7/02/93	Office Review: K. Jehnke	
Unit is accessed by Road 2050020. This road goes into a TTRA buffered area in order to access the unit. Unit could be logged with better overall suspension from two landings with a large tower, however, the number of split yard streams and lack of adequate tailholds requires a smaller swing yarder. Difficult falling because of split yarding in north end of unit. Either reclassify one of the streams as nonsplit yard or drop. Average unit slope = 40%. Swing yarder will need slack pulling capacity to split yard creeks. Sixty percent uphill. About 80% of the unit will have partial suspension. Tailholds will be required in the 200 foot buffer. Partial cutting is feasible with a MSP carriage.			
Watershed/Fisheries	Field Review: E. Ablow, 6/29/93	Office Review: T. Stewart	
Eastern boundary of unit is bounded by a Class I, C1, 200' buffered stream. Three streams flow east into the Class I stream and are low gradient on the eastern edge of the unit. Stream 1 (A3-A4 channel flowing through the northern portion of the unit) and Stream 3 (A3-A4 channel flowing through the center of the unit) require 100' buffers as they enter the flood plain. Up the side slope of the unit they change to Class III. Stream 4 (A4 channel flowing through the unit south of Stream 3) and Streams 2, 1b, and 1a (all three A4 channels flow into Stream 1) are all Class III streams. Slope break buffers will be implemented along class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: J. Metzler, 8/13/93	Office Review: T. Stewart	
Unit is very wet and soil creep is occurring on the moderately steep slopes. Achieve at least partial suspension due to high MMI.			
Wildlife	Field Review: H. Sloan, 6/29/93	Office Review: R. Fairbanks	
No concerns. Retain level 1 snag retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen Road 30 in Fore-ground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Class I stream on east boundary requires 200' buffer where channel type is C1 and 100' buffer where channel type is C2. Lower portions of Class III streams become Class I and require 100' buffers. Class III streams in unit require split yarding. Recommend Type F seed tree cut to maintain structure in this relatively windfirm stand. Partial suspension was requested for unit after layout. Partial suspension only possible on approximately 80% of unit. Final design may need to alter boundary or logging configuration. Mitigation measures for this unit are: F1, F3, F5, F6, F8, W1, W2, W10, R1.

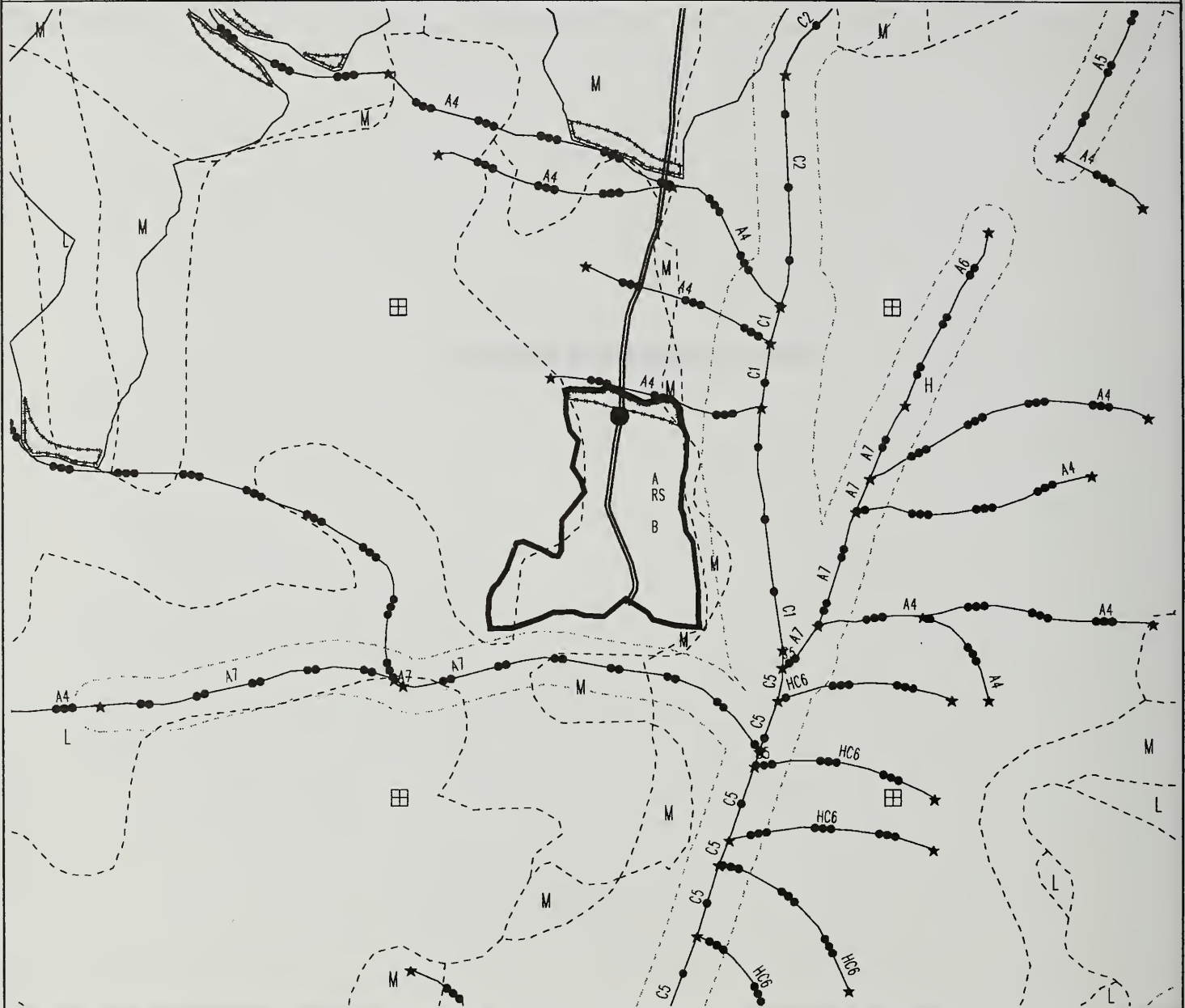
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 405

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrato
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

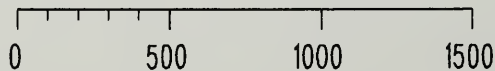
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Chonnel Type Chonge

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 405	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-37
ACRES: 12	VOL.: 207.2 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is within the Ball's Lake Corridor.			
Timber/Vegetation	Field Review: J. Miller, 7/1/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock but includes a few cedar and spruce in the northern half. Alaska yellow cedar decline evident and prominent in the western half. Moderately low volume, multi-canopy stand with < 50% canopy closure in the western half. Some thin soil, poor soil drainage areas.			
Logging/Transportation	Field Review: M. Whitty/J. Graves, 7/07/93	Office Review: J. Doyal/	
Use a swingyarder with a high lead or running skyline system. Maximum yarding distance is plus/minus 500' with 75% uphill yarding; 25% downhill yarding. There is 2,200' of Class I buffers. Tailholds will be in the buffers. Blowdown potential is high - no mitigation given. Existing blowdown in unit. Partial cut is possible, but not recommended due to blowdown potential. Economics are fair. Unit is accessed by Road #2050020.			
Watershed/Fisheries	Field Review: B. Rogers, 6/29/93	Office Review: T. Stewart	
Stream along south boundary needs 100' buffer. Stream to east needs 100' buffer plus 100' for portion having C1 channel type (only 100' buffer for C5 channel type). Stream to north flagged O/W is a class III a slope break buffer will be implemented adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: H. Sloan/C. Confer, 6/26/93	Office Review: T. Stewart	
Moderate slopes. Small slide on east boundary excluded from 1 unit.			
Wildlife	Field Review: H. Sloan/C. Confer, 6/26/93	Office Review: M. Hall	
No wildlife concerns. Heard woodpecker. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Class II stream at south boundary requires 100' buffer. Class I stream on east side requires 200' buffer. Class III stream at north end requires directional falling. Recommend Type B clearcut because of blowdown potential. Directionally fall trees away from small slide on east side. Mitigation measures for this unit are F5, F8, W1, W4, W10, R1.			

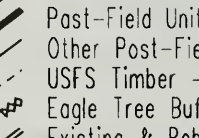












CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD







VCU : 595

UNIT : 406

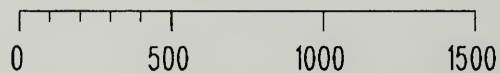
QUAD : C3-NW



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- | | |
|---|---|
|  | Revised Control Lake Project Boundary |
|  | Past-Field Unit Boundary w/ Setting Codes |
|  | Other Past-Field Unit Boundaries |
|  | USFS Timber - Volstrata |
|  | Eagle Tree Buffer of 330ft |
|  | Existing & Rebuilt Roads |
|  | F.S. Roads Under Construction |
|  | Past-Field Proposed Roads |
|  | Class 3 Treatment Zone |
|  | Ahmu-Class 1 & Stream Chantypes |
|  | Ahmu-Class 2 & Stream Chantypes |
|  | Ahmu-Class 3 & Stream Chantypes |

-  Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41
 Landings
 Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 406	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-36
ACRES: 23	VOL.: 653.3 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is just south of Ball's Lake.			
Timber/Vegetation	Field Review: M. Case/S. Karstens, 7/6/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present and concentrated in creek areas. Predominantly hemlock regeneration. Heavy amount of mistletoe infection evident in canopy. Low to moderate amounts of stem decay (pini) evident in hemlock and cedar. Low volume, mixed-species, multi-canopy stand with < 50% canopy closure in the western portion. Some thin soil areas. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: E. Urstadt/J. Spolar/D. Keister, 7/01/93	Office Review: K. Jehnke	
Road #2000000 provides the main access to the unit. With two spurs wood can be swing yarded to roads and landings. A 70 foot tower will be needed at the landing at 0+00R, 71-81-36B to provide full suspension over the split yard creek to the south. If a swing yarder was used the boundary would have to be modified to exclude the area south of this stream. Partial suspension will be available over most of the unit.			
Watershed/Fisheries	Field Review: E. Ablow, 6/30/93	Office Review: T. Stewart	
Stream 1, south on east side of unit (C5 channel) requires a 100' buffer from the top of the slope. There are side channels and alcoves covered by dense vegetation. Coho fry and trout were found throughout. Stream draining southeast portion (A2) and north boundary stream (A2) flow into southeast boundary stream from the northwest. They are both Class II streams flowing directly into a Class I stream. Dolly varden were seen in both at their mouths. They require 100' buffers. Stream 3 also flows into the western side of stream 1. The first 600' is a Class II, A2 stream that requires 100 foot buffer. Above 600' there is a 4' bedrock control velocity fish barrier that forks into two Class III stream channels. Streams 4 and 5 are both Class III streams that flow from the eastern side of Stream 1. Slope break buffers will be implemented along Class III streams, adjacent areas will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: E. Ablow, 6/30/93	Office Review: T. Stewart	
The northeastern portion of the unit on the eastern side of the stream that runs southeast is less stable. There is a recent slide northeast of the north boundary stream. The northeast side of the unit should not be logged above 310' elevation because of instability. The rest of the unit has no concerns.			
Wildlife	Field Review: H. Sloan, 6/30/93	Office Review: R. Fairbanks	
No concerns. Level 2 snag retention due to adjacency to large naturally fragmented area. Goshawk and murrelet surveys performed. No goshawk detections. Murrelet presence confirmed.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Seen from Big Salt Lake in Middleground. Maximum Modification VQO. CVD problems?			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	

Cultural - Unit outside of high probability areas for cultural resources.
Lands - No state/private or encumbered lands occur adjacent to unit.

Interdisciplinary Team Recommendations

Unstable area excluded at northeast side of unit. Type B clearcut recommended because of blowdown potential. Blind lead at southern tip of unit should be left as leave island. Leave island eliminates need for 70' Tower. Class II stream at north end requires minimum 100' buffer. Class I stream on east side of unit requires minimum 100' buffer. This stream should receive an additional 0-100' no-cut buffer because wide floodplain. Class II stream leaving unit near southern corner requires a 100' buffer which was not flagged in the field as blue and white. This stream should be re-evaluated as Class II due to ephemeral nature despite low gradient and lack of barriers. Mitigation measures for this unit are F1,F3,F5,F6,F8,W1,W4,W10,R1.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 407

QUAD : C3-NW



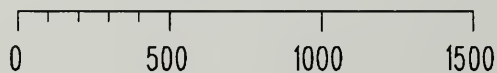
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 407	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-97
ACRES: 22.0	VOL.: 635.1 MBF	LOGGING SYSTEM: Live Skyline/Helicopter	
LANDSCAPE ZONE: Unit is within the Steelhead Creek drainage southwest of Control Lake.			
Timber/Vegetation	Field Review: G. Hedin, 6/18/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar except in northeast portion. Steep slopes, rocky outcrops, and shallow soils. Lacking spruce and western red cedar regeneration. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: J. Doyal/ E. DeWilde/J. Herzberg, 6/17/93	Office Review: M. Whitty	
Accessed by Road #2000300 and spur road 72-82-6.1C which has 960 feet of easy construction. Recommend large tower with live skyline/slackline rigging. Seventy percent uphill and 30% downhill yarding. Maximum yarding distance is approximately 750 feet. landing at 0+00R. The northern third of the unit will be helicopter yarded due to difficult road construction and soils concerns. Fair unit economically.			
Watershed/Fisheries	Field Review: R. Rogers, 6/15/93	Office Review: T. Stewart	
Southwest side of unit is a Class III with O/W flagging - a slope break buffer will be implemented, adjacent area will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: R. Rogers, 6/15/93	Office Review: T. Stewart	
Unit generally 50% to 60%. Minor soil creep. Attempt partial suspension near rock outcrop.			
Wildlife	Field Review: C. Confer, 6/15/93	Office Review: M. Hall	
No concerns. Heavy bear sign/use throughout area. Wolf scat observed. Level 1 snag retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Scenic viewshed - not seen. Maximum Modification VQO. Scenic Viewshed LUD. Seen from Road 30 in Foreground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut leaving unmerchantable trees in western 1/2 of unit where practical. Directional fall trees away from Class III stream on west side of unit. Mitigation measures for this unit are F1, F2, F3, F5, F6, F8, W1, W3, W5, W10, R1. Note: Logging engineers should review the need for two spur roads and landing.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 408

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

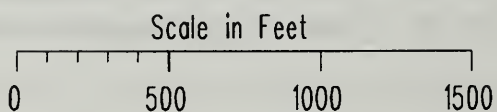
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

April 21, 1998



CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 408	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-97
ACRES: 10	VOL.: 240.8 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is within the Steelhead Creek drainage south of Control Lake.			
Timber/Vegetation	Field Review: J. Miller, 6/29/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Lacking spruce and western red cedar regeneration. Moderately low volume, mixed-species with < 50% canopy closure in the western half (lower elevations). Poor soil drainage areas within the western half of the unit.</p> <p>Promote spruce/cedar regeneration through planting.</p>			
Logging/Transportation	Field Review: J. Estabrook/D. Keister/C. Giles, 6/25/93	Office Review: M. Whitty	
<p>Accessed by Road #2030111. Recommend swing yarder with running skyline. One hundred percent downhill yarding; maximum yarding distance is approximately 850 feet. Good suspension is available but not required. Fair to poor economic feasibility. Economic feasibility is unclear due to numerous units accessed by mainline roads.</p>			
Watershed/Fisheries	Field Review: J. Knutzen, 6/17/93	Office Review: T. Stewart	
<p>Supply 100' buffer on unit stream at north end of unit on stream one. Stream three is a Class III stream flagged O/W and will receive a slope break buffer, adjacent areas will be treated to provide a reasonable assurance of windfirmness. Streams two and four are flagged green and white.</p>			
Soils/Geology	Field Review: J. Knutzen, 6/17/93	Office Review: T. Stewart	
Gentle slopes with good stability. No concerns.			
Wildlife	Field Review: H. Sloan, 6/17/93	Office Review: M. Hall	
<p>Large wetlands to north of unit below control lake. Low wildlife sign. No concerns. Retain Level 1 structure retention.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			
<p>Type A clearcut. Split yard and directional fall away from Class III stream that flows southeast to northwest through northeast part of unit. 100' buffers on the lower part of this stream and the stream to the east form the northern unit boundary. Mitigation measures for this unit are: F5,F8,F10,W1,W5,W10,V1.</p>			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 409

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

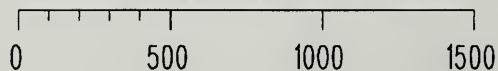
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 409	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-98
ACRES: 26	VOL.: 453.6 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Steelhead Creek drainage south of Control Lake.			
Timber/Vegetation	Field Review: G. Hedin, 6/29/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock but includes a few cedar and spruce. Numerous muskegs are located around the unit incorporated with mixed species, low volume timber. Many small drainages throughout unit along with poor soil drainage areas.			
Logging/Transportation	Field Review: J. Estabrook/C. Giles/D. Keister, 6/24/93	Office Review: M. Whitty	
Unit will be helicopter yarded. Landings can be used on Road #2030111.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/17/93	Office Review: T. Stewart	
Slope break buffers will be implemented along the Class III stream that bisects the unit. Adjacent area will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: J. Knutzen, 6/17/93	Office Review: T. Stewart	
Gentle slopes with good stability. No concerns.			
Wildlife	Field Review: H. Sloan, 6/17/93	Office Review: M. Hall	
Bear and deer sign/use evident. Muskegs surround unit within 1/4 - 1/2 mile. Sharp-shinned hawk observed flying. No special concerns. Retain Level 1 structure retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
See list. Seen from Control Lake in Middleground. Partial Retention VQO. Could meet Retention with little work.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type G shelterwood harvest to meet partial retention. Split yard Class III stream in unit. Mitigation measures for this unit are: F2,F4,F5,F6,W1,W2,V1,V2.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 410

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

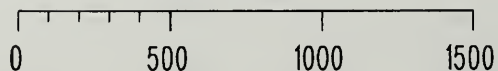
● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

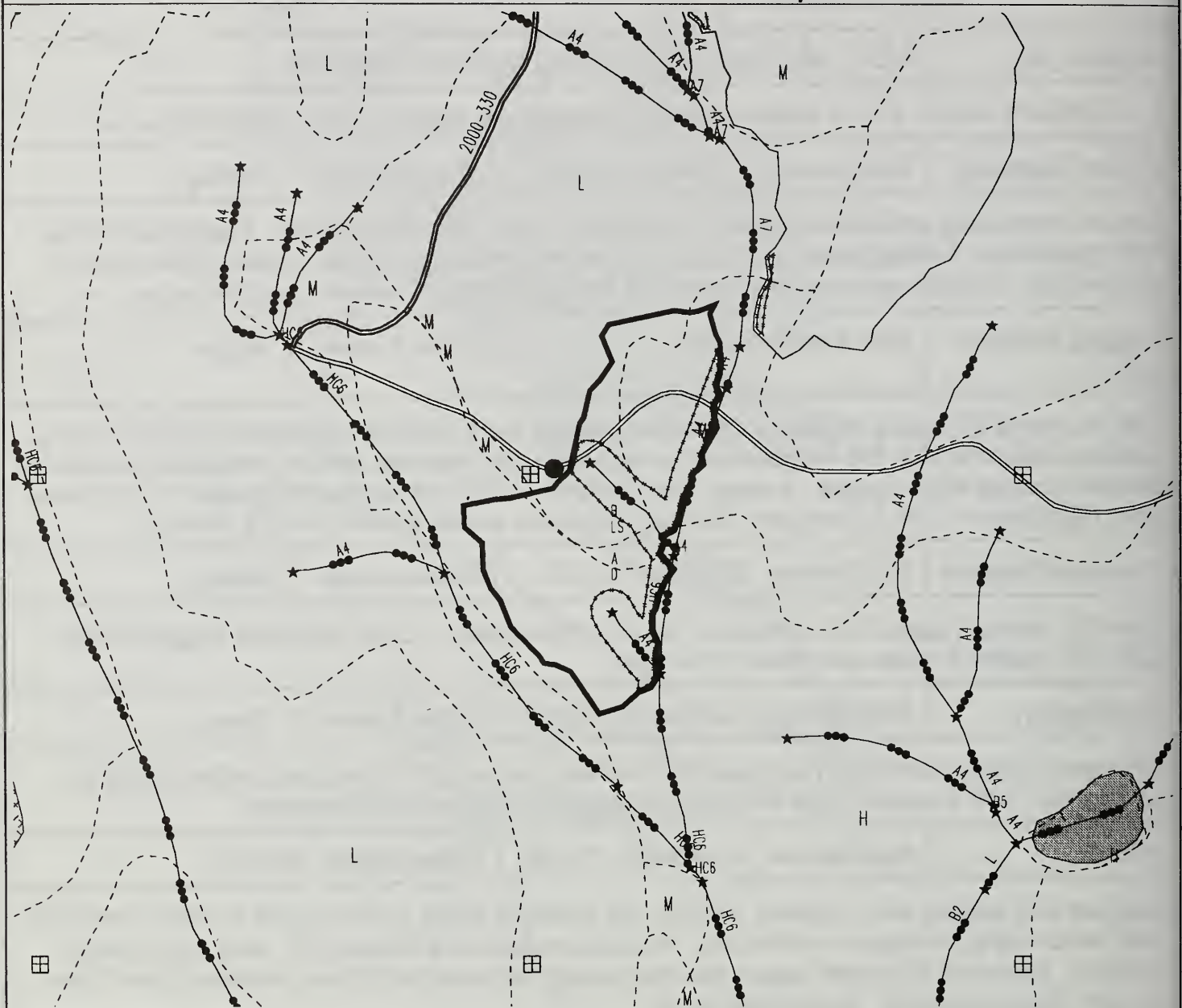
VCU #: 595	UNIT #: 410	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-194
ACRES: 30.1	VOL.: 606.4 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is in the Steelhead Creek drainage adjacent to Rio Roberts Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 7/28/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Predominantly hemlock regeneration. Lacking spruce and western red cedar regeneration overall. Alaska yellow cedar decline evident. Promote spruce/cedar regeneration through planting or consider partial retention.			
Logging/Transportation	Field Review: none	Office Review: K. Jehnke	
Unit not visited by logging engineers. Helicopter logging due to resource constraints (McGilvery soils). Landings located in Unit 596-410 are small (swing yarder type) and may need to be expanded or alternate between landings while logging. Average flight distance = 2800 feet; average flight slope = -14%; maximum flight slope = -17%. These same landings will also be needed to helicopter log 595-409.			
Watershed/Fisheries	Field Review: B. Romey, 7/15/93	Office Review: T. Stewart	
Class IIb, streams flagged O/W, directional fall away from stream. Class IIa streams flagged B/W require 100' buffer. Streams are entirely out of unit.			
Soils/Geology	Field Review: M. Minnillo, 7/15/93	Office Review: T. Stewart	
Helicopter logging prescribed. Also lower unit boundary below bluffs in northern portion of unit, approximately 1100' elevation. This will limit the possibility of major soil disturbance.			
Wildlife	Field Review: M. Minnillo, 7/15/93	Office Review: M. Hall	
High use deer bedding area. Maintain northern unit boundary below 1,100' in order to retain more highly used habitat along muskegs to north of unit. Maintain southern unit boundary 50' away from muskeg complex. Prescribed helicopter logging per soils/geology concerns would retain structure (Level 1) and as many snags as possible. Deer winter range.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Boundary modified to exclude McGilvery soils at upper part of unit. Partial cut with retention of trees 15" DBH and smaller, mainly cedar (Type E overstory removal) to maintain the yellow cedar component. Remove dead but merchantable cedar. Maintain 100' buffer from Class II streams. Mitigation measures for this unit are: F1, F2, F3, F4, F5, W1, W2.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 411

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

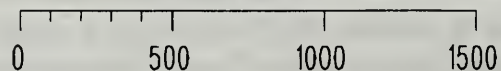
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 411	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/890-131
ACRES: 20	VOL.: 409.1 MBF	LOGGING SYSTEM: Slackline with 100' Tower, Live Skyline, Shovel	
LANDSCAPE ZONE: Unit is within the Kogish Mountain Corridor.			
Timber/Vegetation	Field Review: G. Hedin, 7/06/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce and lodgepole present. Regeneration predominantly hemlock and includes a few cedar but is lacking spruce. Low volume, mixed-species, multi-canopy with < 50% canopy closure in the northern portion of the unit. Some thin soil, poor soil drainage areas. Consider partial retention/seedtree harvest to promote regenerative success in the northern half. Promote spruce/cedar regeneration through planting in the southern half.			
Logging/Transportation	Field Review: K. Martin/K. Jehnke, 7/05/93	Office Review: M. Whitty	
Recommend large tower in a live skyline configuration. 80% uphill yarding; maximum distance is approximately 1,000'. 20% shovel logging; maximum distance is approximately 400' to 500'. Split yard streams which require full suspension, will affect the final boundary locations. Numerous additional profiles are necessary to determine where logs can be fully suspended over these streams. This unit has high blowdown potential. Economic feasibility appears to be favorable. Unit is accessed by Road #2000000.			
Watershed/Fisheries	Field Review: R. Rogers, J. Metzger, 6/23/93	Office Review: T. Stewart	
No fisheries streams within unit. All streams are Class III. Small stream entering from west directional fall and split yard. Streams running down western and eastern area are deeply incised, unstable, and require special prescriptions to retain root-strength in inner gorge. Directional fall and achieve full suspension, leaving all non-merchantable trees and windfirm merchantable trees to keep at least 70' tree spacing. This applies to inner gorge area (approximately 200' on each side of streams) applies to all of the western stream and lower half of eastern stream below the large cliff and rockslide. Stream in the central upper area directional fall and split yard (stream out of unit in final layout). Stream in center of unit directional fall and split yard. Leave all trees at the confluence of the eastern and central stream (where flagged) for stability concerns.			
Soils/Geology	Field Review: R. Rogers/J. Metzger, 6/23/93	Office Review: T. Stewart	
Weak rock overlain by shallow soils. Numerous shallow landslides within inner gorges of western and lower half of eastern stream. Full suspension yarding and selective harvest required in inner gorge to protect shallow soils and retain root strength.			
Wildlife	Field Review: R. Rogers/J. Metzler, 6/23/93	Office Review: M. Hall	
Unit within large tract of previously unentered old-growth. Retain level 1 structure retention. Confirmed murrelet eggshell found in muskeg located on north border of unit. Murrelet dawn survey conducted on 7/30/93 - murrelet presence determined. Occupied behavior exhibited to north, northeast of unit within 1,000'.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from Big Salt Lake in Middleground. Maximum Modification VQO. CVD problems?			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	

Cultural - Unit outside of high probability areas for cultural resources.
Lands - No state/private or encumbered lands occur adjacent to unit.

Interdisciplinary Team Recommendations	
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Unit modified for leave island between streams in southeastern portion of unit. Additional leave island (Type D Clearcut) at northwest of unit between two NW streams. and leave reserve trees along streams as indicated under Watershed/ Fisheries. Type A clearcut in remainder of unit. Full suspension possible on west end along NW stream. Split yard eastern stream and harvest only to break in slope. Mitigation measures for this unit are: F1, F3, F5, F6, F7, F8, W1, W4.
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 412

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 412	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-36
ACRES: 55	VOL.: 1948.6 MBF	LOGGING SYSTEM: Live Skyline/Swingyarder with 100' Tower	
LANDSCAPE ZONE: Unit is within proposed Steelhead Creek drainage north of Big Salt Lake.			
Timber/Vegetation	Field Review: M. Case, 7/08/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with some spruce present. Regeneration predominantly hemlock with some spruce but is lacking cedar. Windthrow pockets present in south-central portion of unit coinciding with dense regeneration pockets. Low to moderate amounts of mistletoe infection evident in canopy. Steep relatively shallow soils in the northeast portion and poor soil drainage areas within the southwest portion. Promote spruce/cedar regeneration through planting. Harvest all mistletoe infected hemlock and cut infected regeneration. Windthrow potential limits partial retention feasibility.			
Logging/Transportation	Field Review: E. Urstadt/J. Spolar/C. Giles, 7/8/93	Office Review: M. Whitty/E. Urstadt	
Landing at 0+00R will require deadmen, twistlers, or equivalent anchors. Partial suspension indicated on profile will require an extension of Rd #2000000. Tailholds to east of this landing will require skylines through the TTRA buffer. Use MSP carriage with slackline configuration here. Shotgun system for remaining roads. Swingyard western unit; approximately 25% of area. High blowdown potential; no partial cut. All uphill logging. Good economics.			
Watershed/Fisheries	Field Review: G. Jackson/J Metzler, 6/30/93, 8/13/93	Office Review: T. Stewart	
Streams to south and east are Class I requiring 100' buffer.			
Soils/Geology	Field Review: G. Jackson, 6/30/93, 8/13/93	Office Review: T. Stewart	
Slopes in the majority of the unit are < 50% and stable. Steeper slopes (up to 80%) occur along the northern half of the east boundary and have McGilvery soils. This area should receive at least partial suspension.			
Wildlife	Field Review: C. Confer, 8/13/93	Office Review: R. Fairbanks	
Level 2 structure retention. Retain 100' buffer on southwest corner muskeg due to wetness of the area and quality of habitat for wildlife species. Bear and deer sign/use evident. Northern third of unit was added after the goshawk survey was conducted; therefore this area may not have adequate survey coverage, although Station 6 is nearby.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen from Big Salt Lake in Middleground. Maximum Modification VQO. CVD problems?			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Stream on east side requires 100' buffer. Class I stream on east side requires 50' selective cut. Stream in west does not require buffer as Class III (was flagged with 100' buffer). Wildlife leave island left at north end of unit because of non CFL. Recommend Type B clearcut because of windthrow and mistletoe. Partial suspension required and achievable at upper end of unit. Stream in south central area not practical to spilt yard. Requires guylines through TTRA buffer. Mitigation measures for this unit are F1, F3, F5, F8, W1, W4, W10, R1.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 413

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

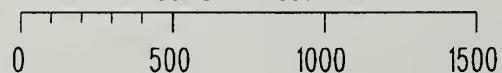
● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 413	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-36
ACRES: 14	VOL.: 255.3 MBF	LOGGING SYSTEM: Highlead with 70' Tower	
LANDSCAPE ZONE: Unit is in the Steelhead Creek drainage southwest of Control Lake.			
Timber/Vegetation	Field Review: B. Hasebe, 8/4/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Stand is lacking nurse logs and advance regeneration. Regeneration concerns due to low site index soils and poor quality of regeneration. Steep, shallow soils, and poor soil drainage areas within unit. Alaska yellow cedar decline evident. Fairly dense understory vegetation. Analyze for economic feasibility given the low site productivity and low volume of the stand. Consider partial retention/seedtree harvest to promote regenerative success and desirable species composition.			
Logging/Transportation	Field Review: J. Doyle/ E. DeWilde/J. Herzberg, 6/17/93	Office Review: E. Urstadt	
Unit is accessed by Rd #2000300 and 3 short spurs which are easy to medium construction. Recommend highlead logging system (80% uphill and 20% downhill logging). Blowdown may be a problem at top of unit. "Feather" edge or leave submerchantile trees to alleviate. Unit is economical.			
Watershed/Fisheries	Field Review: R. Rogers, 6/15/93	Office Review: T. Stewart	
A Class III stream flagged O/W - A slope break buffer will be implemented along this stream, adjacent area will be treated to provide a reasonable assurance of windfirmness.			
Soils/Geology	Field Review: R. Rogers, 6/15/93	Office Review: T. Stewart	
No major concerns outside of partial suspension on moderate slopes.			
Wildlife	Field Review: C. Confer, 6/15/93	Office Review: M. Hall	
Marten scat located in southwest end of unit. Wolf kill/scat in central portion of unit. Light to moderate deer use. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Scenic viewshed - not seen. Maximum Modification VQO. Scenic Viewshed LUD. Seen Road 30 in Foreground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut, but fall and leave some nurse logs for regeneration and feather upper edge to reduce blowdown. Monitor for possible planting recommendations. Directionally fall trees away from small section of Class III stream on west end of unit. Mitigation measures for this unit are: F1,F3,F5,F6,F8,F10,W1,W5,W10,V1,V2.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 414

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

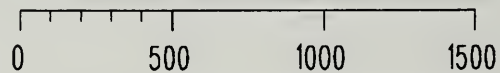
Landings

Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

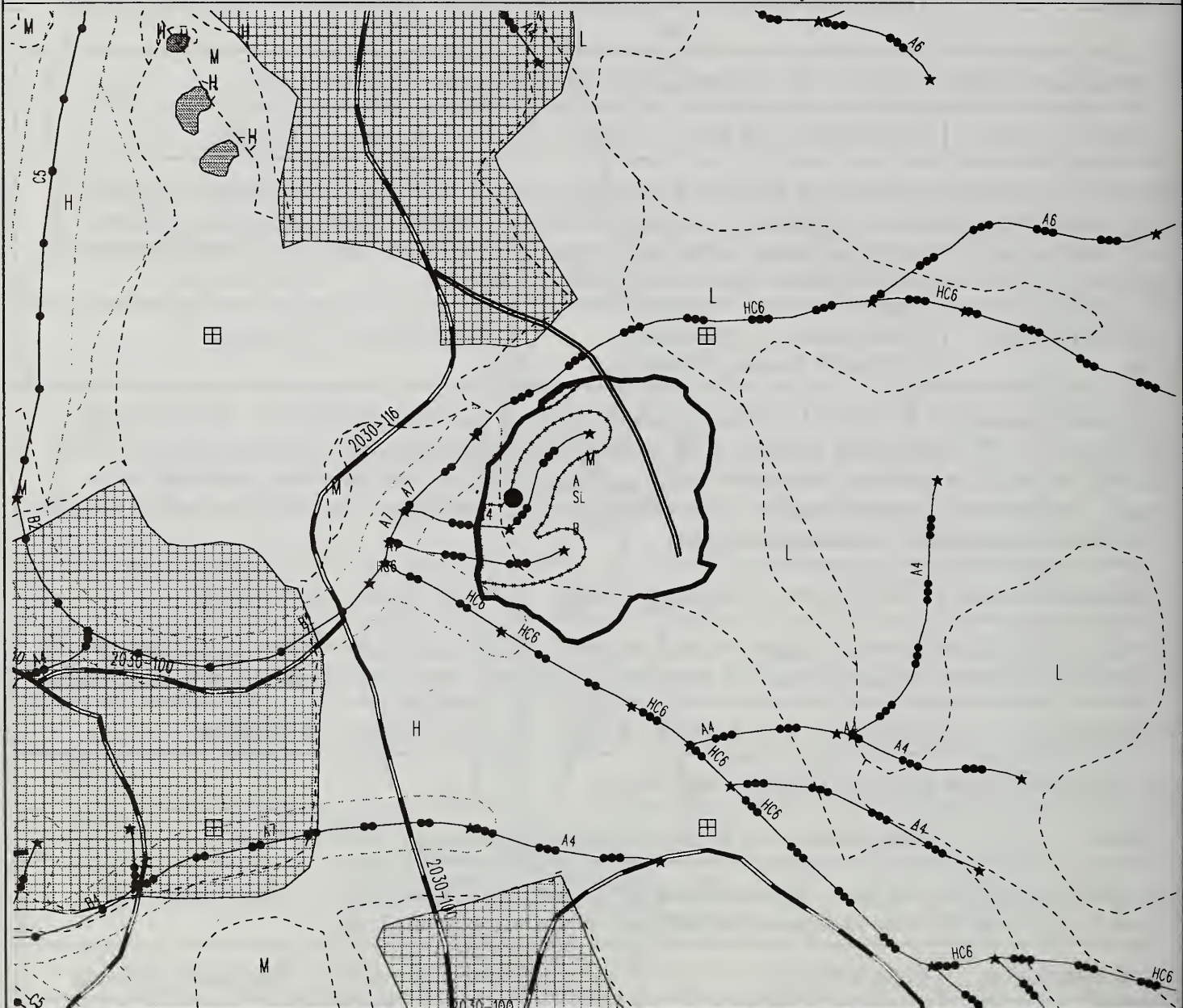
VCU #: 595	UNIT #: 414	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-98
ACRES: 45	VOL.: 1309.9 MBF	LOGGING SYSTEM: Highlead with 70' Tower Helicopter	
LANDSCAPE ZONE: Unit is in the Steelhead Creek drainage south of Control Lake.			
Timber/Vegetation	Field Review: M. Case, 6/21/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few lodgepole are present. Predominantly hemlock regeneration with spruce. Southwestern portion contains steep, rocky slopes and relatively shallow soils. Muskeg inclusions within the northern portion of the unit. Fairly dense understory vegetation. Light amount of mistletoe infection evident in canopy.			
Logging/Transportation	Field Review: J. Estabrook/ C. Giles/D. Goude, 6/16/93	Office Review: E. Urstadt	
This unit is accessed by Rd #2030110 which required 3,700' of medium construction. Three landings will be used. A 70' tower using highlead is the recommended harvest system. Partial suspension is not required, but could be achieved with minor landing position changes. No blowdown problems are expected. This unit can be partial cut, but it is not recommended. Helicopter log the Eastern half of the unit to provide full suspension. Economics are good.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/15/93	Office Review: A. Wolfson	
Splityard stream in southwestern region where it enters the unit. Slope break buffers will be implemented on the Class III stream, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: J. Knutzen, 6/15/93	Office Review: A. Wolfson	
Unit has gentle slopes and good stability. No concerns.			
Wildlife	Field Review: H. Sloan, 6/15/93	Office Review: M. Hall	
Low wildlife use (deer and bear). Wetlands east of unit area HCC, adjacent to unit at south boundary. Retain Level 2 structure due to adjacent to HCC and naturally fragmented matrix.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Seen Road 30 in Middleground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Unit is not within a block. Type A clearcut. Maintain 100' buffer on Class II stream on northern unit boundary. Mitigation measures for this unit are F2, F3, F4, F5, F8, W1, W3, W5, W10, V3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 415

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

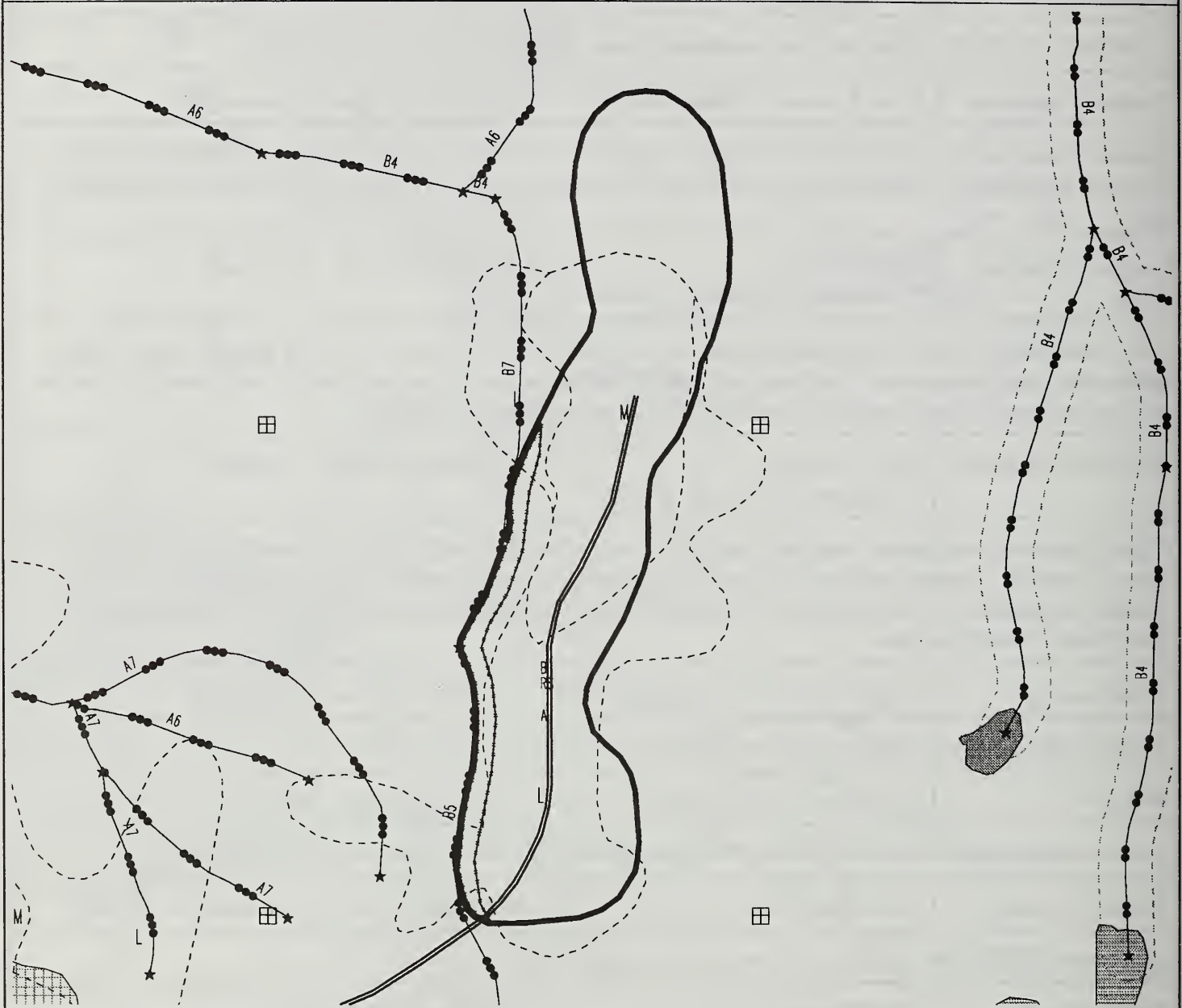
VCU #: 595	UNIT #: 415	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/900-97
ACRES: 18.8	VOL.: 344.1 MBF	LOGGING SYSTEM: Slackline with 100' Tower	
LANDSCAPE ZONE: Unit is in the Steelhead Creek drainage, south of Control Lake.			
Timber/Vegetation	Field Review: J. Miller, 6/21/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Lacking spruce and western red cedar regeneration. Rock outcrops and shallow soils.			
Logging/Transportation	Field Review: T. Wetzel/G. Slawson, 7/28/93	Office Review: E. Urstadt	
Unit is accessed by 490' of moderate construction, Rd #2030116. The unit will be logged using a 100' tower with slackline system. Tailtrees will enable partial suspension as required by soils people. Unit is very economical. Partial cutting would be difficult unless done in wedges.			
Watershed/Fisheries	Field Review: J. Knutzen/R. Romey, 6/17/93	Office Review: T. Stewart	
Class IIa on west-northwest boundary needs 100' buffer on lower 400' to slope break above. Class III, above Class IIa - harvest only to slope break of V-notch, adjacent areas will be treated to provide a reasonable assurance of wind firmness. Class IIa on south boundary needs 100' buffer. Directional fall away from Class III stream.			
Soils/Geology	Field Review: R. Rogers, 6/17/93	Office Review: T. Stewart	
Partial suspension above 600' elevation required to minimize soil disturbance.			
Wildlife	Field Review: R. Rogers, 6/17/93	Office Review: M. Hall	
Low to moderate deer use/wildlife use. No special concerns noted. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Stream 1 requires 100' buffer below, but split yard above where it changes to Class III. Steams 2 and 3 are not near unit. Type B clearcut because of amount of harvest in vicinity. Partial suspension required and achievable. Mitigation measures for this unit are: F1,F3,F5,F6,F7,F8,W1,W4,W10.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 416

QUAD : C3-NW

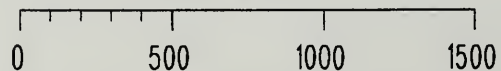


- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 416	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-196
ACRES: 44.7	VOL.: 735.9 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is in the Steelhead Creek drainage.			
Timber/Vegetation	Field Review: G. Hedin, 6/25/93	Office Review: J. Goering	
<p>Species composition includes hemlock, cedar, spruce, and lodgepole. Regeneration predominantly hemlock with spruce but includes a few cedar. Muskeg incursions incorporated with mixed species, low volume timber in most areas.</p> <p>Some thin soil, poor soil drainage areas. Numerous muskegs are located around the unit.</p>			
Logging/Transportation	Field Review: B. Wilkinson/ K. Martin/B. Webster, 6/25/93	Office Review: E. Urstadt	
<p>Harvest system is swing-yard to continuous roadside landing. 70% is uphill and 30% is downhill yarding. Partial suspension is not required, but will be obtained. Landing "A" will need deadman or equipment for guys. The southeast boundary will need tie-backs for tailholds. No blowdown problems are expected. Unit can be extended north (as flagged). Unit is accessed by Rd #2030500 which has 4,100' easy and 1,000' medium construction. Economics are fair.</p>			
Watershed/Fisheries	Field Review: E. Ablow, 7/24/93	Office Review: T. Stewart	
<p>Stream 1-B5 requires a 25' no program buffer. Stream 1 (B7 changing to a B5 channel) forms the western boundary of the unit. It is a Class III water quality stream. Recommend harvest to slope break and directional fall away from stream.</p>			
Soils/Geology	Field Review: E. Ablow, 7/24/93	Office Review: T. Stewart	
Unit averages 30 percent slopes. The unit is stable with no concerns.			
Wildlife	Field Review: H. Sloan 7/24/93	Office Review: M. Hall	
<p>Wetlands surround unit. Moderate deer sign/use - two observed. Also bear sign/use evident. Woodpeckers audible. Retain Level 2 structure due to adjacent to HCC and naturally fragmented matrix.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			
<p>25' no harvest buffer along B5 southwest part of unit. Directional fall trees from this stream where it is channel type B7. Type A clearcut above road and at setting on end of road. Below road use running skyline and harvest 50% of unit by harvesting every other yarding corridor and leaving the opposite corridor. (I type strip group selection). Mitigation measures for this unit are: F4, F5, F8, W1, W2, W5, W10.</p>			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 418

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

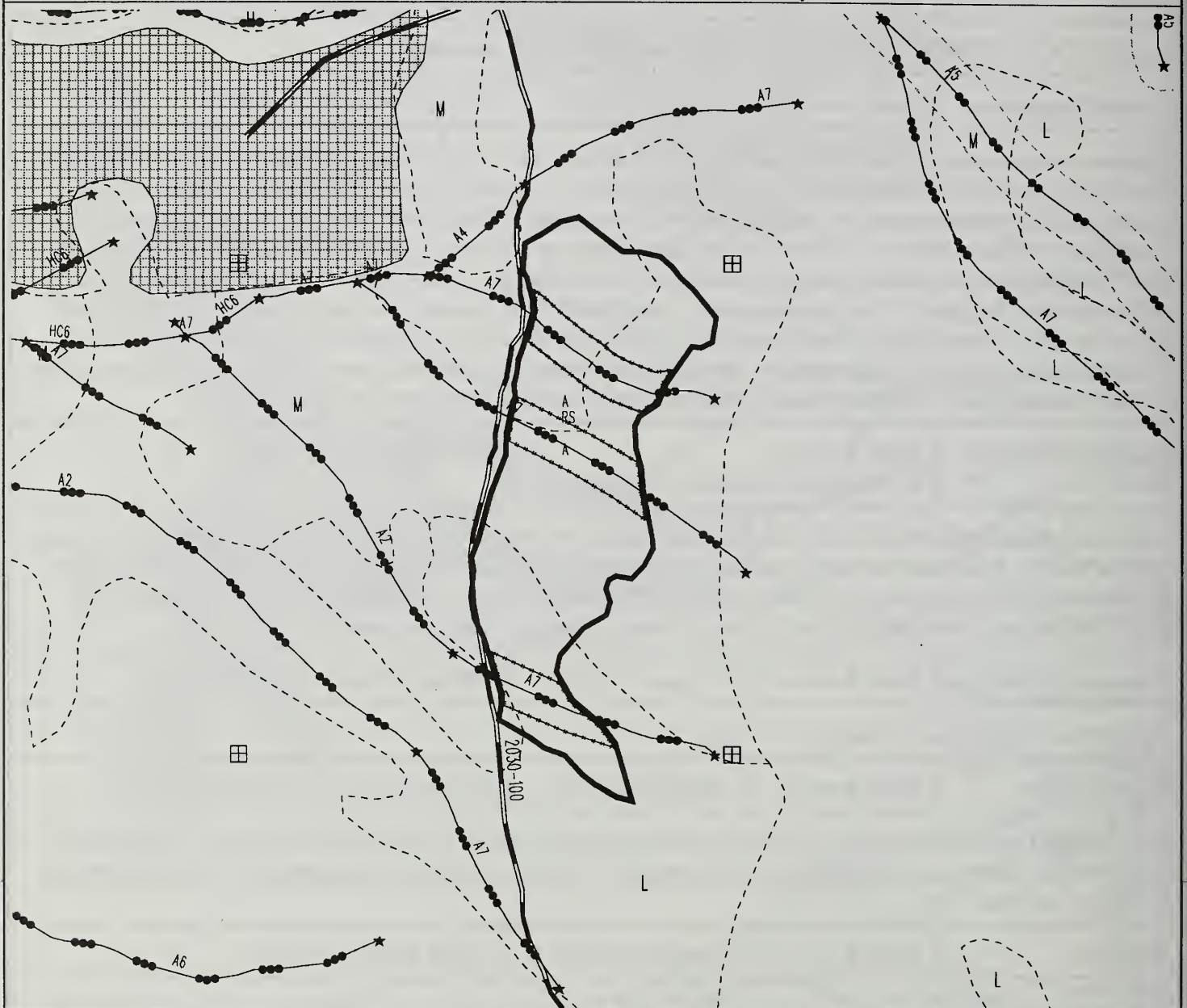
VCU #: 595	UNIT #: 418	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-100
ACRES: 12	VOL.: 251 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is located in the Steelhead Creek drainage.			
Timber/Vegetation	Field Review: J. Goering, 7/13/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock but includes a few cedar and spruce. Alaska yellow cedar decline evident in the southwest and southeast portion incorporated with muskegs. Windthrow damage present in middle portion of unit within a wet area. Generally lacking spruce and western redcedar regeneration due to over-story composition and closed canopy. Some poor soil drainage areas. Regeneration mostly on nurse logs and consists of hemlock. Unit encompasses a short slope with muskeg and unproductive site above and below the unit. Road bisects small productive site. Relocate road to minimize loss to site productivity. Promote spruce and cedar regeneration through shelterwood or seed tree harvest. Exclude wet areas from retention to minimize windthrow loss. Clearcut would leave almost pure hemlock stand.			
Logging/Transportation	Field Review: E. DeWilde/K. Martin, 7/08/93	Office Review: J. Doyal	
Unit is accessed by Road #72-82-7.2. This spur has 2100 feet of easy to medium construction. Landings will be small. Recommend swing yarding using running skyline. Seventy percent is downhill logging. Partial suspension can occur on most of the unit; full suspension is not possible without helicopter logging. Partial cut is not feasible due to steep downhill logging. Good economics.			
Watershed/Fisheries	Field Review: R. Rogers, 6/15/93	Office Review: T. Stewart	
No streams in unit; no concerns.			
Soils/Geology	Field Review: R. Rogers, 6/15/93	Office Review: T. Stewart	
Unit mapped as 100% McGilvery, however soils are poorly drained (not McGilvery) and no major instability noted. Recommend full suspension if possible. Partial suspension is acceptable if soil disturbance is kept to less than 15%.			
Wildlife	Field Review: C. Confer, 6/15/93	Office Review: M. Hall	
Area appears deficient of snags - recommend Level 3 structure retention. Muskegs surrounding unit to south moderate deer use.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Recommend full suspension if possible. Unit mapped as 100% McGilvery soils, but very wet - not McGilvery. Type B clearcut. Mitigation measures for this unit include: F3, F4, F5, F8, W1, W4, W10.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 419

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

April 21, 1998

Scale in Feet

0 500 1000 1500

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

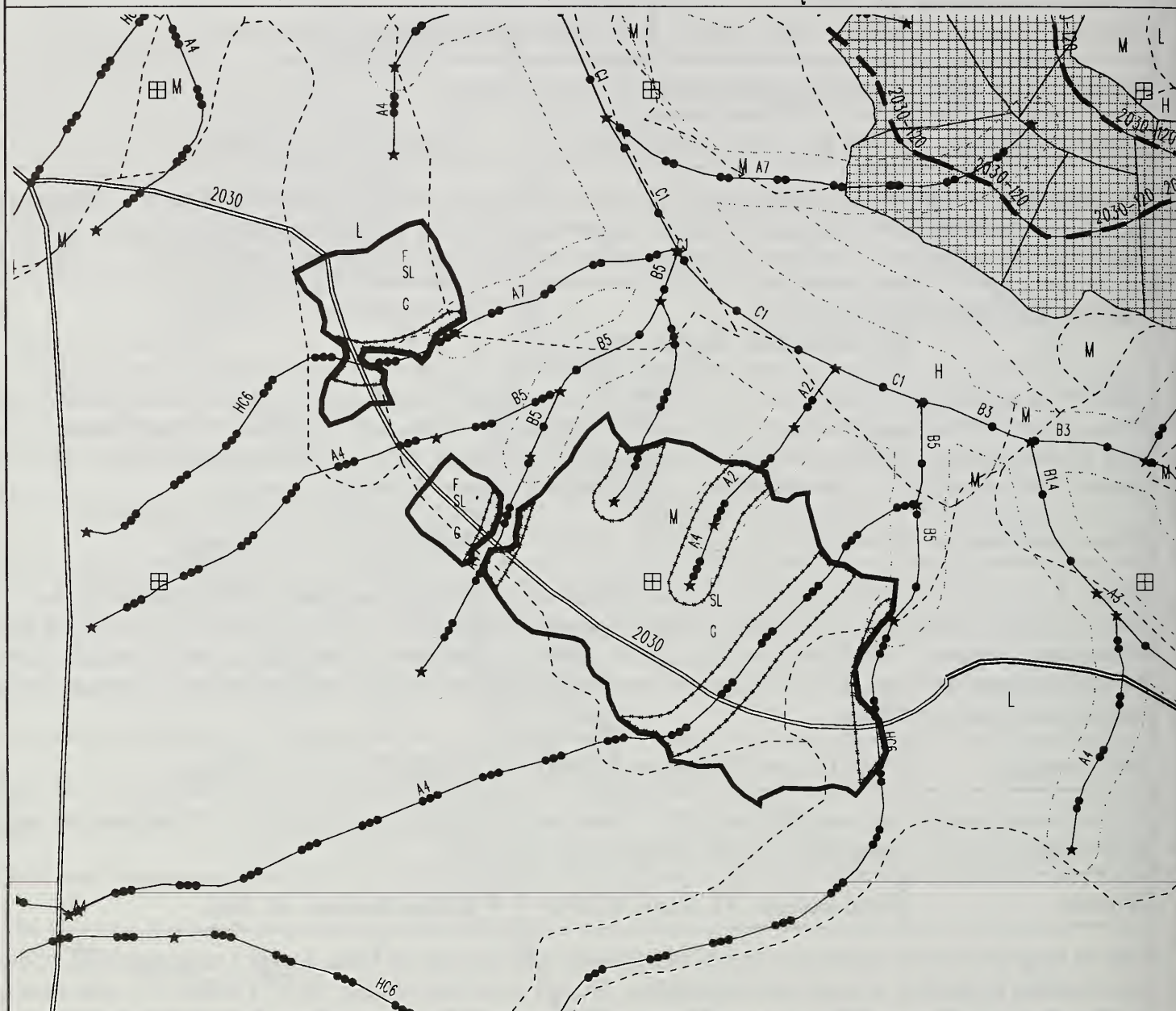
VCU #: 595	UNIT #: 419	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-197
ACRES: 34.4	VOL.: 1164.4 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Located in the Steelhead Creek Drainage.			
Timber/Vegetation	Field Review: T. Stecher, 6/27/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes a small amount of spruce and cedar. Regeneration mostly on nurse logs and consists of hemlock. Poor regeneration in the upper elevations possibly due to the lack of nurse log material. Moderate to heavy amounts of stem decay evident in hemlock.			
Logging/Transportation	Field Review: E. DeWilde/K. Martin, 7/8/93	Office Review: E. Urstadt	
This unit is accessed by USFS Road #2030-100. This road will be used as a continuous roadside landing for a swing yarder. Partial suspension is not required but is possible in the lower portions of the unit using a running skyline system. Final layout should include profiles to assure that the top (flat bench on east side) can be yarded. Do not partial cut. No blowdown problems are foreseen. Economics are good.			
Watershed/Fisheries	Field Review: E. Ablow, 6/24/93	Office Review: T. Stewart	
Stream 1 (A7) is a Class III stream that is directly outside the northern boundary of the unit and Stream 4 is also a Class III stream that follows the southern boundary of the unit. Both are outside of the unit and are not of concern. Streams 2 and 3 both are Class III A7 streams. They flow through the center of the unit. Stream 3 may have an undersized culvert at the road crossing. Recommend split yarding Stream 3. Stream 2 is small drainage and has no concerns			
Soils/Geology	Field Review: E. Ablow, 6/24/93	Office Review: T. Stewart	
Slopes in unit average between 40% and 65%. There are no indications of instability. There are rock outcroppings in the southwest corner that may be a regeneration concern.			
Wildlife	Field Review: H. Sloan, 6/24/93	Office Review: M. Hall	
Unit in large previously unentered tract of old-growth; high percent of VC6. Level 1 snag retention. Goose observations in muskeg at south unit boundaries. Beaver pond east of unit. HCC's within 1/2 mile west and southeast of unit. Low wildlife use noted in unit. Retain Level 3 structure due to heavily harvested areas in proximity to unit.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut harvest. Where suspension allows, special attention should be given to saving advanced regeneration. Split yard Stream 3 bisecting unit. Mitigation measures for this unit are: F4, F5, W1, W5, W11.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 420

QUAD : C3-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

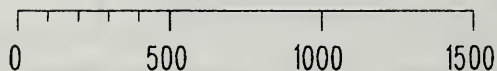
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

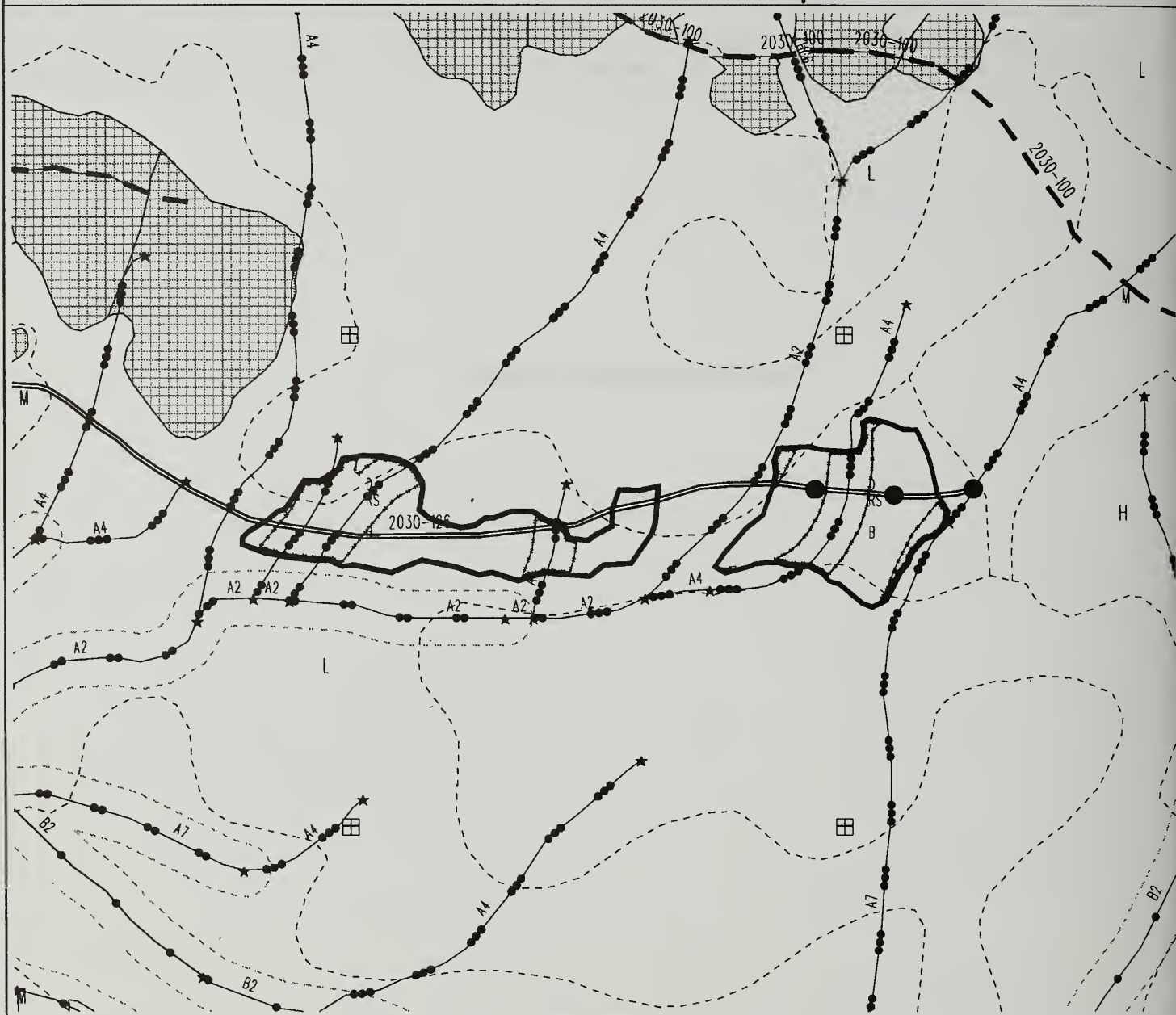
VCU #: 595	UNIT #: 420	QUARTER QUAD: C3SW	PHOTO YR/#: 1990-102
ACRES: 45	VOL.: 1393.9 MBF	LOGGING SYSTEM: Slackline with 100' Tower/Highlead	
LANDSCAPE ZONE: Unit is in Steelhead Creek drainage, southwest of Rio Roberts Watershed.			
Timber/Vegetation	Field Review: S. Karstens/J. Goering, 6/24/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Shallow soils overlying bedrock. Steep, rocky slope, relatively thin soils and exposed rock. Deep</p> <p>V-notches present in northern and southern portion composed of rocky soils and bedrock. Probable salmonberry incursions with soil/site disturbance based on existing high densities. Promote spruce and cedar regeneration through partial retention or shelterwood harvest.</p>			
Logging/Transportation	Field Review: J. Doyal/E. Dewilde/J. Herzberg, 6/21/93	Office Review: C. Barnhart	
Unit is accessed by Road #2030000. This road has difficult V-notch crossings. Recommend highlead downhill and slackline for uphill logging. The east boundary has a 200 foot stream buffer. Partial suspension can be achieved, but is not required. Partial cut is not feasible on downhill portion. Fair economics.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/17/93	Office Review: T. Stewart	
Slope break buffers will be implemented on streams one through four, adjacent areas will be treated to provide a reasonable assurance of wind firmness. Supply 200' buffer for northeast boundary stream.			
Soils/Geology	Field Review: J. Knutzen, 6/17/93	Office Review: T. Stewart	
No concerns. Unit has gentle slopes and good stability.			
Wildlife	Field Review: H. Sloan, 6/17/93	Office Review: M. Hall	
HCC units adjacent to unit (north to northeast) wetlands to the south. Level 2 structure. Moderate to heavy deer use. Bear use also evident.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			

Type A clearcut in downhill highlead settings, and Type G shelterwood in uphill slackline settings for regeneration and soil concerns. Maintain 100' buffers on both Class II streams in unit (not flagged field), and a 200' buffer on Class I stream along northeast boundary. Class I stream along south boundary requires a 100' no cut plus 50' selective cut buffer. Split yard all streams in unit. V-notch stream at north end requires harvesting to be limited to slope break. Class III stream in southern portion of unit requires selective cut below slope break. This stream should be reviewed prior to final layout and possibly upgraded to Class I or II. Mitigation measures for this unit are F1,F3,F4,F5,F6,F7,F8,F10,W1,W2,W5,W10.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

QUAD : C3-SW



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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 421	QUARTER QUAD: C3SW	PHOTO YR/#: 1991/ 690-199
ACRES: 19	VOL.: 510.9 MBF	LOGGING SYSTEM: Swingyard/Running Skyline, Slackline w/ 70' Tower	
LANDSCAPE ZONE: Unit is in Upper Steelhead Drainage.			
Timber/Vegetation	Field Review: J. Miller/T. Stecher/ J. Goering, 6/23/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some spruce. Few cedar are present. Predominantly hemlock regeneration. Some areas of moderately low volume, multi-canopy yellow-cedar with < 50% canopy closure.</p> <p>Fairly dense understory vegetation in low volume areas. Many small seeps and poor soil drainage areas mainly in the northeastern and upper-central portions. High erosive and sediment potential in northwest corner. Potentially increased by adjacent clearcut. Minimize soil compaction/displacement and avoid yarding over bog/muskeg areas.</p> <p>Promote spruce/cedar regeneration through planting.</p>			
Logging/Transportation	Field Review: J. Doyal/J. Herzberg/ E. Dewilde, 6/25/93	Office Review: M. Whitty	
<p>Recommend swingyarder for western 2/3 of unit; 50% uphill/downhill; maximum distance is approximately 500'. Eastern 1/3, 70' tower with live skyline or slackline; 70% uphill and 30% downhill. Maximum distance is approximately 600'. Partial suspension in most of unit. This unit was laid out north of the planned location. Good economics.</p>			
Watershed/Fisheries	Field Review: B. Romey, 6/21/93	Office Review: T. Stewart	
<p>100' buffer on Class II streams of unit. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.</p>			
Soils/Geology	Field Review: B. Romey, 7/24/93	Office Review: T. Stewart	
Moderate slopes, stable soils; no concerns			
Wildlife	Field Review: B. Romey, 7/24/93	Office Review: R. Fairbanks	
<p>Deer and bear heavy use along south side of unit. Retain snags and greater than 12" DBH trees in streams for wildlife corridors. Two-week-old wolf scat contained deer remains. Moderate deer use (fawn tracks) in unit. Bear sign evident. Yellow-bellied sapsucker identified. Retain Level 2 structure due to HCC's in area.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			

Type B clearcut to mitigate windthrow and wildlife concerns. Maintain 100' buffer on stream south of unit and split yard all others. Type I singletree selective in cedar snag patch. Mitigation measures for this unit are: F1,F3,F4,F5,F6,F8, W1, W2, W4, W10.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 422

QUAD : C3-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

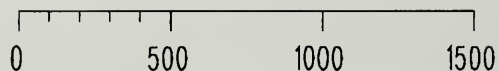
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

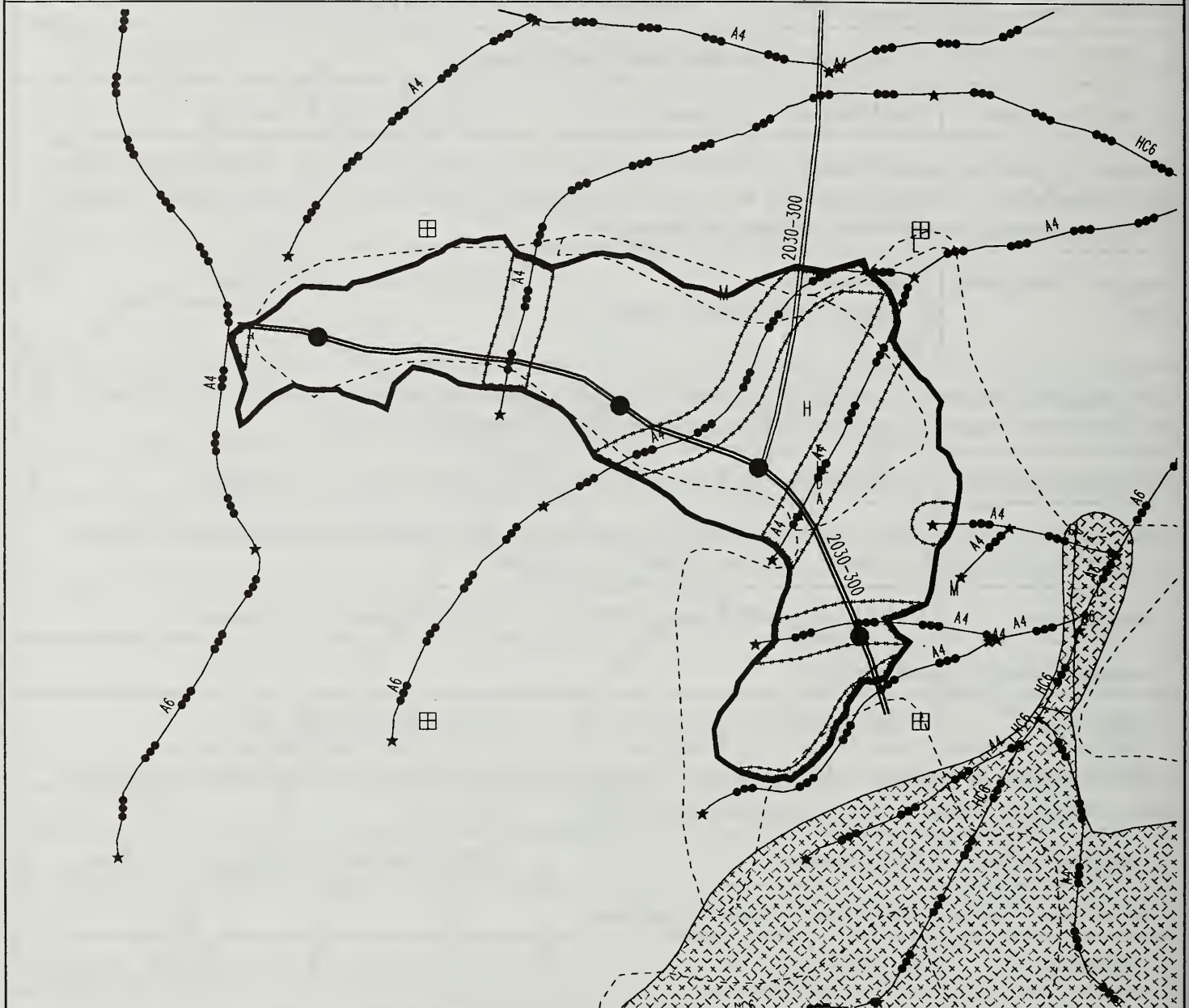
VCU #: 595	UNIT #: 422	QUARTER QUAD: C3SW	PHOTO YR/#: 1991/690-198
ACRES: 10	VOL.: 330 MBF	LOGGING SYSTEM: HELICOPTER	
LANDSCAPE ZONE: Unit is within the Steelhead Creek drainage.			
Timber/Vegetation	Field Review: B. Hasebe, 6/25/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes a few spruce and cedar. Predominantly hemlock regeneration. Lacking spruce and w. redcedar regeneration. Little to no mistletoe evident in canopy. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: J. Doyal/J. Herzberg/J. Spolar, 7/29/93	Office Review: E. Urstadt	
Unit designed for conventional logging systems changed to helicopter yarding systems. Do not partial cut. Blowdown may be a problem at the top of the unit. The economics are fair.			
Watershed/Fisheries	Field Review: R. Rogers, 6/21/93	Office Review: T. Stewart	
Stream north of unit needs a 100' no-cut buffer with additional 100' selective harvest buffer. Streams east and west of unit are Class II and need a 100' no-cut buffer.			
Soils/Geology	Field Review: R. Rogers, 6/21/93	Office Review: T. Stewart	
Moderate slopes; no unstable soils.			
Wildlife	Field Review: G. Green, 6/21/93	Office Review: M. Hall	
Unit surrounded by muskegs. High goose use - ten geese observed flying over unit. Wolf scat marker post in muskeg. Maintain Level 1 structure retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut. No streams within unit as laid out. Maintain 100' no cut and 100' selective cut buffer on Class I stream north of unit. Road as laid out goes through the selective harvest portion and possibly the no cut portion of this Class I stream at base of unit. Final unit layout should carefully review this road and consider moving it up on the slope as is now shown. This may make this unit feasible only for helicopter yarding. Maintain 100' buffer on stream west of unit, other buffered stream no longer adjacent to unit. Mitigation measures for this unit are: F2, F4, F5, F10, W3, W11.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 431

QUAD : C3-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

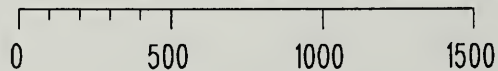
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 431	QUARTER QUAD: C3SW	PHOTO YR/#: 1991/990-102, 103
ACRES: 84.6	VOL.: 3024.3 MBF	LOGGING SYSTEM: Highlead	
LANDSCAPE ZONE: Unit located in Upper Steelhead Drainage.			
Timber/Vegetation	Field Review: M. Case, 7/7/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock but includes a few cedar and spruce. Low to moderate amounts of mistletoe infection evident in canopy.</p> <p>Steep, rocky, and shallow soils. Many small streams, and poor soil drainage areas. Low to moderate amounts of stem decay evident in hemlock. Promote spruce/cedar regeneration through planting.</p>			
Logging/Transportation	Field Review: J. Doyal/J. Herzberg/D. Deister, 7/06/93	Office Review: C. Barnhart/M. Whitty	
<p>Partial suspension is available with large tower and slackline system (not required), otherwise highlead. Split settings at Class III streams where possible. A partial cut may be feasible. Accessed by Road #72-82-19.5. 70% uphill and 30% downhill yarding.</p>			
Watershed/Fisheries	Field Review: G. Jackson, 6/29/93	Office Review: T. Stewart	
<p>The unit is dissected by five Class III streams, each of which occupies a V-notch. Three of the streams are in the southeast corner of the unit, while another bisects the unit, running southwest to northeast, and the other runs the same direction and is located in the western third of the unit. Harvest should only be to the break in slope at the top of the V-notches.</p>			
Soils/Geology	Field Review: G. Jackson, 6/29/93	Office Review: T. Stewart	
<p>Gentle to moderate slopes throughout most of unit. Northeast side has terrain up to 100% in slope and two V-notch streams. Recommend excluding this area. Most of what was mapped as MMI4 soil does not have a very high potential for mass wasting.</p>			
Wildlife	Field Review: C. Confer, 6/29/93	Office Review: R. Fairbanks	
<p>Two black bear seen in muskeg south of southwest unit boundary. Sandhill crane heard north of unit. Structure retention level 2. Murrelet survey with no detections. Goshawk survey with no detections.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			

Type A clearcut above (south of the road). Type B clearcut with retention of diversity of all species and diameter classes along the lower portion of the unit boundary. Retain approximately 50% of the basal area in groups between yarding corridors along the bottom 15' to 200' from flagged unit boundary. This will help provide structure within this heavily harvested drainage. Split yard all streams in unit. Mitigation measures for this unit are: F1,F3,F4,F5,F6,F7,F8,W1,W4,W5,W10,W11,W12,R1.

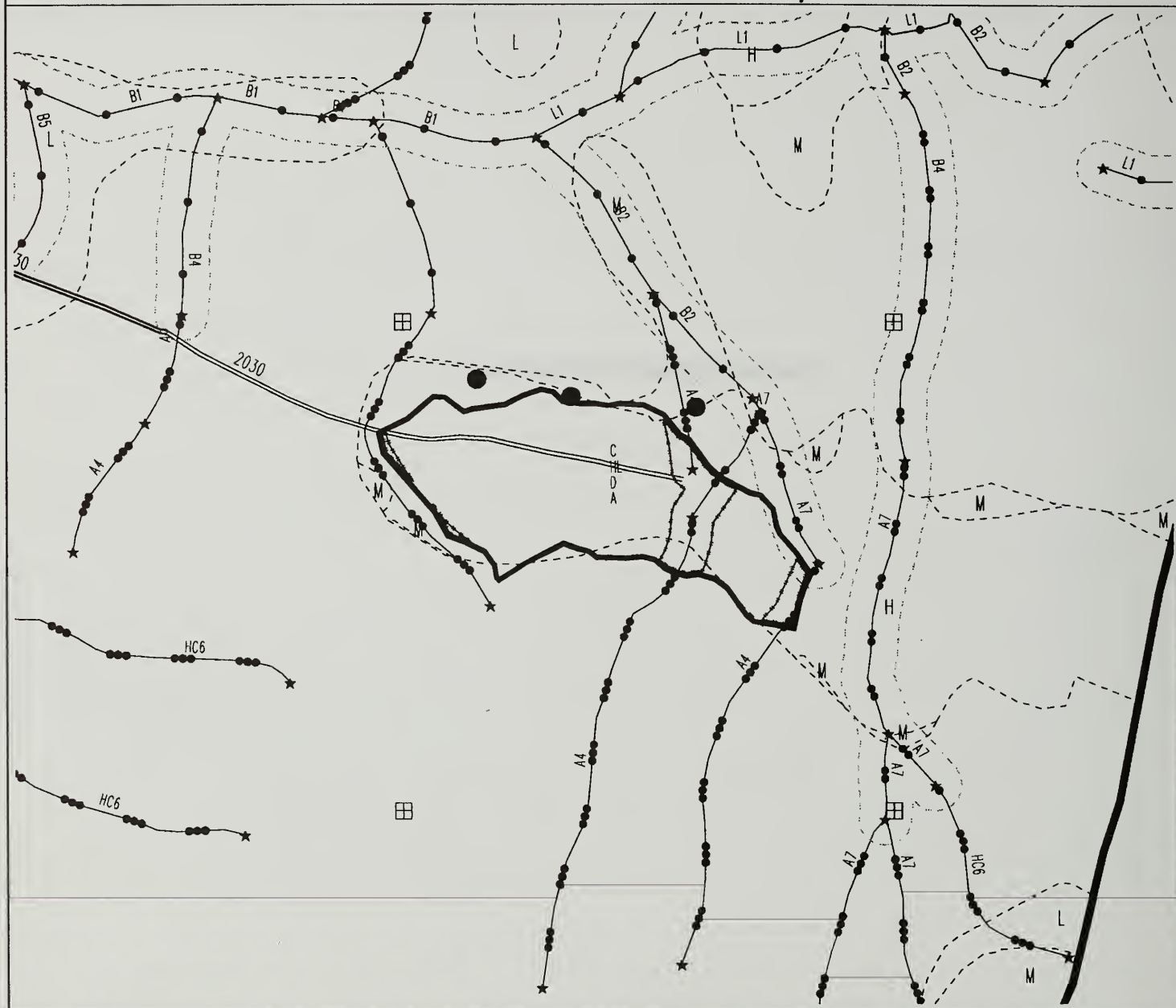
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 433

QUAD : C3-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

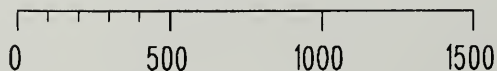
★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

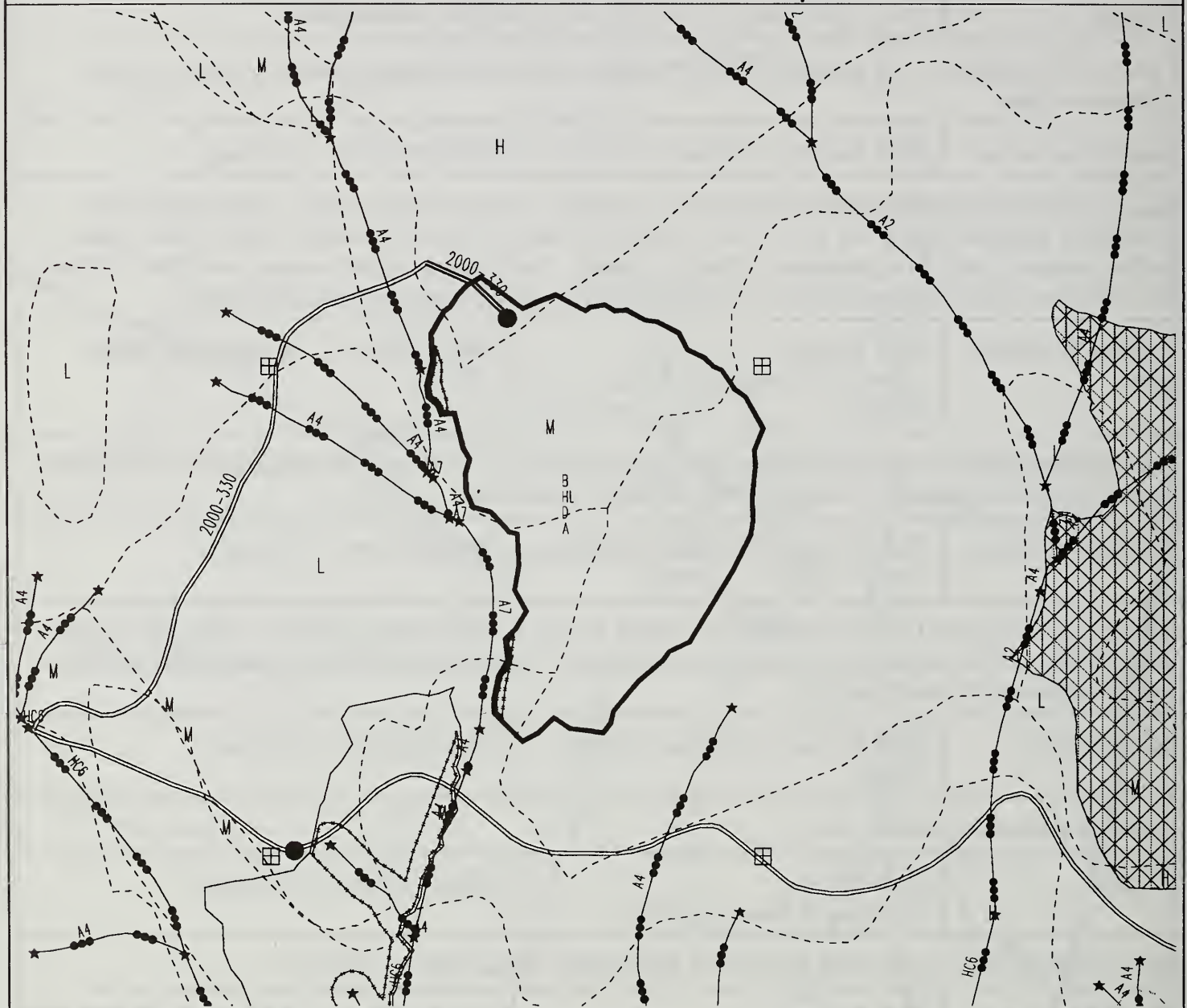
VCU #: 595	UNIT #: 433	QUARTER QUAD: C3SW	PHOTO YR/#: 1991/690-199
ACRES: 21	VOL.: 852.9 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit located in Upper Steelhead Creek Drainage and within 1/2 mile of Karta Wilderness Area.			
Timber/Vegetation	Field Review: B. Hasebe, 7/2/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedars. Regeneration predominantly hemlock with a few spruce but is lacking red cedar and yellow cedar. Alaska yellow cedar decline evident. Little to no mistletoe evident in canopy. Lacking spruce and western redcedar regeneration. Shallow soils overlying bedrock. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: J. Doyal/J. Herzberg/J. Spolar, 6/29/93	Office Review: C. Barnhart/M. Whitty	
East boundary placed on Class III stream and Class II TTRA 100' buffer. Unit designed for conventional logging systems, changed to helicopter. Fair economic feasibility.			
Watershed/Fisheries	Field Review: B. Romey, 6/21/93, 7/24/93	Office Review: T. Stewart	
Stream 1 east of unit is Class II - needs 100' buffer. Stream 2 within unit is Class III - flag O/W, slope break buffers will be implemented along Class III stream. Adjacent area will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: B. Romey, 6/21/93, 7/24/93	Office Review: T. Stewart	
Moderate slopes, no unstable soils.			
Wildlife	Field Review: G. Green/B. Romey, 7/24/93	Office Review: R. Fairbanks	
Heavy bear and deer use in lower part of unit (north side). Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut. Maintain 100' buffer on Class II stream east of unit. Split yard Class III stream within unit. Mitigation measures for this unit are: F5, F6, W1, W3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 595

UNIT : 434

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

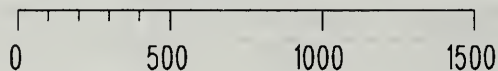
- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

- Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 595	UNIT #: 434	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/890-131
ACRES: 37	VOL.: 1132.9 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within the Kogish Mountain Corridor north of Big Salt Lake.			
Timber/Vegetation	Field Review: T. Stecher, 7/30/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock but includes some cedar and spruce.			
Logging/Transportation	Field Review: E. Urstadt/J. Herzberg, 8/09/93	Office Review: M. Whitty, 9/14/93	
Use a medium (70') tower with a running skyline system. Maximum yarding distance is approximately 1,300'. There are no suspension requirements, although partial suspension is achievable on 75% of unit. Partial cut not recommended due to potential blowdown. Recommend feathering northwest and northeast boundaries by leaving nonmerchantable and small merchantable trees within 50' of boundary. Much of the unit was excluded due to infeasible split yard requirements. Potential helicopter logging area. Unit could be expanded to northeast. Good economic feasibility. Unit is accessed by Road #2000000.			
Watershed/Fisheries	Field Review: R. Rogers, 7/21/93	Office Review: T. Stewart	
Two streams in west portion of unit are Class III - directional fall, split yard, leave buffer in V-notches (in original unit paper plan), adjacent areas will be treated to provide a reasonable assurance of wind firmness..			
Soils/Geology	Field Review: R. Rogers, 7/21/93	Office Review: T. Stewart	
No special concerns; no instability noted away from streams.			
Wildlife	Field Review: D. Crowe, 7/21/93	Office Review: M. Hall	
Structure retention per watershed/fisheries concerns would maintain cover for high deer and bear use area in unit; Level 2 retention. Bald eagle detection. Retention level will be met by retaining area west of unit between streams.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit in timber production LUD. Seen from Big Salt Lake in Middleground. Maximum Modification VQO. CVD problems?			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut due to windthrow potential. Unit boundary moved to the east to comply with split yarding requirements of streams that could not be met with current logging systems. Retain non-merchantable timber along v-notch areas of west stream. Mitigation measures for this unit are: F1,F5,F6,F7,F8,W1, W5, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 596

UNIT : 404

QUAD : C3-NW



- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

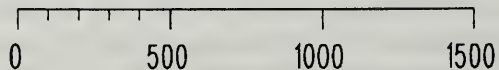
★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

--- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 596	UNIT #: 404	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/990-94
ACRES: 59	VOL.: 1262.2 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within the Honker Divide Watershed and the Ball's Lake Corridor.			
Timber/Vegetation	Field Review: J. Miller/J. Goering, 8/24/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration predominantly hemlock but includes some spruce. Poor regeneration on the northeastern half due to slope failures, brush incursions and snow damage. Windthrow damage associated with poor soil drainage and shallow soils in middle portion of unit. Slope instability/failure potential existing. Many sloughs/slope failures in the upper elevations of the unit. Unstable slopes due to thin soil, poor soil drainage areas throughout. Many small drainages throughout unit. Probable salmonberry incursions with soil disturbance based on existing densities and open patches. Rock outcrops and snow damage to regeneration evident in the upper elevations. Consider partial retention helicopter harvest with retention of extreme upper elevation and northern portions.			
Logging/Transportation	Field Review: T. Wetzel/D. Foster, 8/11/93	Office Review: M. Whitty	
Accessed by Rd #71-82-8.1 (abandoned). Recommend helicopter logging utilizing selective harvest. Landing is on Rd #71-82-15.2 near Unit 596-403. Flight distance is approximately 2,500' to 3,000'; maximum slope is 15%.			
Watershed/Fisheries	Field Review: J. Metzler, 8/06/93	Office Review: T. Stewart	
Three Class III streams in and adjacent to unit. Stream 2 is a shallow V-notch that should be split yarded. Stream 3 is also a shallow V-notch that makes a logical southeast unit boundary. The Class III stream near the southeast corner is very deeply incised and the unit boundary should stay above the topographic break. Adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: J. Metzler, 8/06/93	Office Review: T. Stewart	
Several small, shallow slumps occur in the northwest portion of the unit. These are vegetated with devils club and ferns. Slopes are 60% to 80% in the northwest end and 50% to 70% in the remainder of unit. This unit should be partial cut to retain root strength and aid in regeneration. Achieve at least partial suspension throughout unit.			
Wildlife	Field Review: M. Minnillo, 8/06/93	Office Review: M. Hall	
Snag retention level 1. Use road as the eastern boundary to maintain some cover between unit and valley/muskeg to east of unit. Moderate/heavy deer use; deer trails abundant. Maintain north-central boundary away from muskeg; make road east unit boundary. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Unit is in scenic viewshed. Most likely not seen from Ball's Lake or Control Lake. Partial Retention VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	

Cultural - Unit outside of high probability areas for cultural resources.
Lands - No state/private or encumbered lands occur adjacent to unit.

Interdisciplinary Team Recommendations	
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Helicopter log (Type G shelterwood) cut retaining approximately 30% of basal area throughout all diameter classes present. Retention intended to provide seed source and snow interception for regeneration, to reduce mass movement potential, to help maintain root strength, to help meet Partial Retention VQO and to retain structure for habitat diversity. Retain existing species composition and trees uniformly throughout stand. Split yard and directional fall along Class III stream that flows through the central part of the unit. Mitigation measures for this unit are: F1, F2,F3,F5,F6,F7,F8,W1,W2,V1.










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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD



UNIT : 406

QUAD : C3-NW



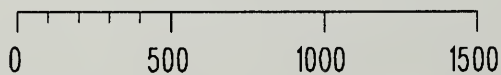
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|---|---|
|  | Revised Control Lake Project Boundary |
|  | Post-Field Unit Boundary w/ Setting Codes |
|  | Other Post-Field Unit Boundaries |
|  | USFS Timber - Volstrata |
|  | Eagle Tree Buffer of 330ft |
|  | Existing & Rebuilt Roads |
|  | F.S. Roads Under Construction |
|  | Post-Field Proposed Roads |
|  | Class 3 Treatment Zone |

-  Lakes and Ponds
 Second Growth Units
 MMI 4
 McGilvery > 41
 Landings
 Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
 Ahmu-Class 2 & Stream Chantypes
 Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 596	UNIT #: 406	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-179
ACRES: 22	VOL.: 677.6 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Ball's Lake Corridor and Honker Divide Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 8/7/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock and includes a few cedar in the southeast section but is lacking spruce. Alaska yellow cedar decline evident.</p> <p>Karst topography with sink holes in the northeast corner. Partial retention in the northwest half due to visuals</p>			
Logging/Transportation	Field Review: M. Whitty/ J. Graves, 9/04/93	Office Review: M. Whitty	
<p>Recommend conventional helicopter logging to meet visual impact restrictions. Approximately 22 acre selective helicopter harvest with landing and maintenance area 3,000' south of unit in vicinity of quarry on existing spur road. Helicopter logging of the area designated for swingyarding was determined to be more appealing economically.</p>			
Watershed/Fisheries	Field Review: J. Metzler, 8/05/93	Office Review: T. Stewart	
<p>There are three Class III streams in the east 1/2 of the original unit. Streams 1, 2, and 3 are small, not incised, and should be split yarded if practical. Stream 4 is south of the original unit and has shifted channels on the upper portion of the slope provide slope break buffer and treat adjacent areas to provide a reasonable assurance of wind firmness.</p>			
Soils/Geology	Field Review: J. Metzler, 8/05/93	Office Review: T. Stewart	
<p>No special concerns; slopes above 70%. No active or past landslides observed. Slopes are less than 40% in portion of unit below 750'.</p> <p>Geology/Karst (D. Herron/R. Horrocks, 8/19/93 & 8/20/93:</p> <p>Southeast facing slope, lower portion contains quartzite, upper (karst) portion andesite. Thin discontinuous layer of limestone traverses unit. Nine large dolines identified with one steeply sloping cave with about 30' of passage visible. Closed drainage in area. One significant cave was located, as well as numerous significant insurgences and sinkholes within the upper 1/3 of unit. Carbonate rock also limited to upper 1/3 of unit. Recommend moving unit boundary to exclude the upper 1/3 of unit.</p>			
Wildlife	Field Review: M. Metzler, 8/05/93	Office Review: M. Hall	
<p>Unit located within large, contiguous stand. Low wildlife use. Deer trails located primarily in upper portion of unit above 900' elevation. Unit bordered by muskeg above and below. Retain Level 1 structure.</p>			
Visual/Recreation	Field Review: J. Metzler, 8/05/93	Office Review: S. Bedross, M. Greenig	

Lakes visible from above 750' elevation. Keep clearcut below 750'. Selectively log upper portion with helicopter. Keep below 750' due to visibility. Seen from Ball's Lake in Foreground. Retention VQO to be met.

Upon completion of harvest, keep road open to unit; build parking area for 3-4 vehicles. Close road beyond unit and revegetate sections that would serve as part of the Thorne Mountain Trail to create a more "trail-like" setting. When building road along section to become part of trail, keep road width, cut and fill areas as narrow as possible.

Cultural/Lands

Field Review:

Office Review: T.W. Greiser, M. Greenig

Cultural - Unit outside of high probability areas for cultural resources.

Lands - No state/private or encumbered lands occur adjacent to unit.

Interdisciplinary Team Recommendations

Defer uppermost portion of unit down to approximately 900' elevation due to limestone and karst features. Unit expanded to the southwest as shown. Upper portion of unit between 750 and 900' will be selectively cut (Type I) taking 10% of the volume as scattered trees to meet Retention VQO. Lower portion of unit will be a Type C clearcut by helicopter. Directionally fall trees away from streams near east end of unit. Deferred areas could possibly be harvested after the zone of watershed influence to karst has been determined. Mitigation measures for this unit are: M2, F1, F5, W1, W2, W3, V1, V2.

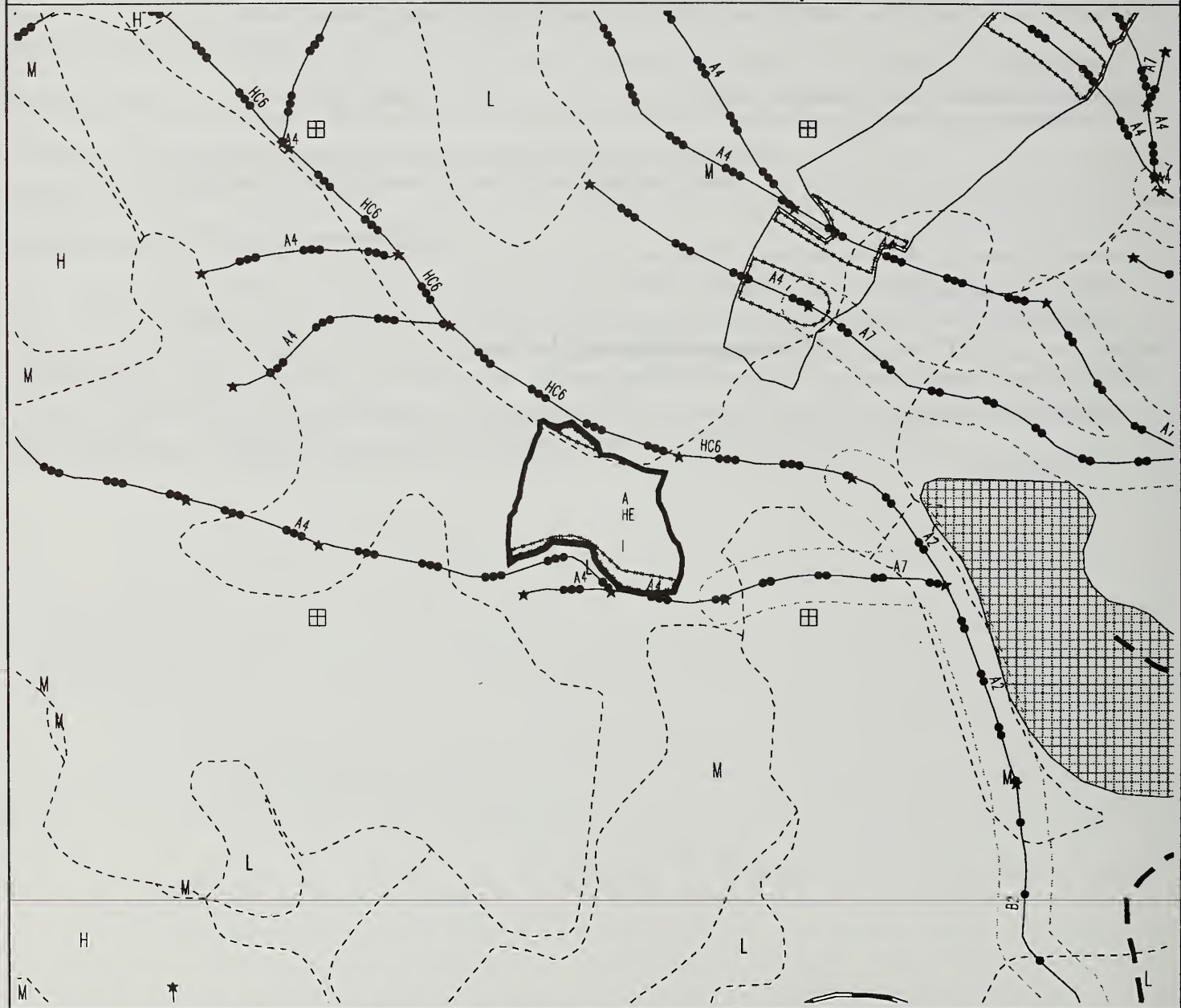
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 596

UNIT : 407

QUAD : C3-NW



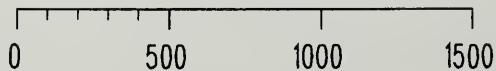
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
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- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 596	UNIT #: 407	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-179
ACRES: 7	VOL.: 66 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Ball's Lake Corridor and Honker Divide Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 8/7/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock but includes some cedar. Muskeg incursions incorporated with mixed species, low volume timber in some areas. Low volume, mixed-species, multi-canopy stand with < 50% canopy closure and low site productivity. Relatively shallow soils, and poor soil drainage throughout unit. Partial retention helicopter harvest.			
Logging/Transportation	Field Review: none	Office Review: K. Jehnke	
Unit was not visited by logging engineers. Unit is close to Control Lake and must meet Partial Retention VQO. Therefore, recommend helicopter logging. Yard to Road #71-82-21 on existing USFS road (east of unit). Average flight distance = 2500 feet. Average flight slope = -10%. Fair economics.			
Watershed/Fisheries	Field Review: J. Metzler, 8/05/93	Office Review: T. Stewart	
There are 2 Class III streams within and adjacent to the unit. Retain windfirm trees within 100' of bank to provide root stability. These streams flow into a Class II/I shortly below the unit boundary.			
Soils/Geology	Field Review: J. Metzler, 8/05/93	Office Review: T. Stewart	
Some instability in inner gorge of stream along north boundary above 800' elevation where slopes are steep; otherwise, no special concerns. Geology/Karst (D. Herron/R. Horrocks, 8/24/93: Adjacent c/o units with limestone. No limestone or karst features identified. No bedrock exposed. Unit is down dip from limestone unit.			
Wildlife	Field Review: J. Metzler, 8/05/93	Office Review: R. Fairbanks	
Little sign, tracks, trails, etc, in unit. Dense VACCI understory beneath open low volume stand.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig, T. Stewart	
Unit not seen from any priority travel route or use area. Unit is to be laid out as shown by A. Wolfson. Seen from Ball's Lake in Middleground. Partial Retention VQO to be met.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Helicopter Type I single tree or group selection to meet Partial Retention VQO. Directionally fall away from Class III stream that flows west-east across the unit. Directionally fall away from the streams bounding the unit on the north and south. Mitigation measures for this unit are: F1, F4, F5, W1, W2, V1, V2.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 596

UNIT : 409

QUAD : C3-NW



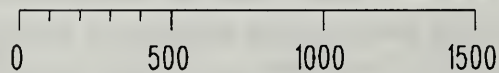
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 596	UNIT #: 409	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-193
ACRES: 28.5	VOL.: 883.5 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within the Honker Divide Watershed near Control Lake.			
Timber/Vegetation	Field Review: M. Case, 7/28/93	Office Review: J. Goering	
Very large trees reaching 175' and over 60" DBH. Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock but includes some spruce. Light windthrow damage present in south-central portion of unit. Low to moderate amounts of mistletoe infection evident in canopy. Possible salmonberry and brush incursions with soil disturbance based on existing moderate densities. Harvest all mistletoe infected hemlock and cut infected regeneration. Consider partial retention due to proximity to Control Lake and to promote desirable species regeneration.			
Logging/Transportation	Field Review: none	Office Review: K. Jehnke	
Unit was not visited by logging engineers. Recommend helicopter logging. Yard to Unit 596-410. Landings may need to be enlarged. Average flight distance = 2200 feet. Average flight slope = -4%. These same landings will also be needed to helicopter log Unit 595-410.			
Watershed/Fisheries	Field Review: B. Romey, 7/15/93	Office Review: T. Stewart	
Streams 3, 4, and 5 are all Class III - flagged O/W, implement slope break buffer, treat adjacent areas to provide a reasonable assurance of wind firmness. Stream 2 is Class I - flagged B/W, 200' buffer for B1 channel type. Stream 1 - flag G/W (not flagged), use as unit boundary. Control Lake approximately 1/4 mile northwest of unit.			
Soils/Geology	Field Review: M. Minnillo, 7/15/93	Office Review: T. Stewart	
Slopes of 70% to 80% throughout unit. Some McGilvery soils near upper unit boundary. Recommend partial suspension throughout due to slope steepness and large trees. Split yard two unstable V-notches in center of unit.			
Wildlife	Field Review: M. Minnillo, 7/15/93	Office Review: M. Hall	
Leave structure standing along split yard notches. Maintain Level 1 structure retention. Structure will be maintained in Class I stream buffer on south side of unit. Initial entry into an area of contiguous habitat. Avoid disturbance of wintering trumpeter swans by avoiding all human activity with 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Not seen from Control Lake.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Unit boundary modified so not visible from Control Lake. Directional fall away from Class III streams in unit. Unit does not extend to Class I stream at south boundary. Type C clearcut. Helicopter logging will mitigate suspension and split yard concerns. Retain small diameter cedar. Mitigation measures for this unit are: F1,F2,F3,F5,F7,W1,W3.

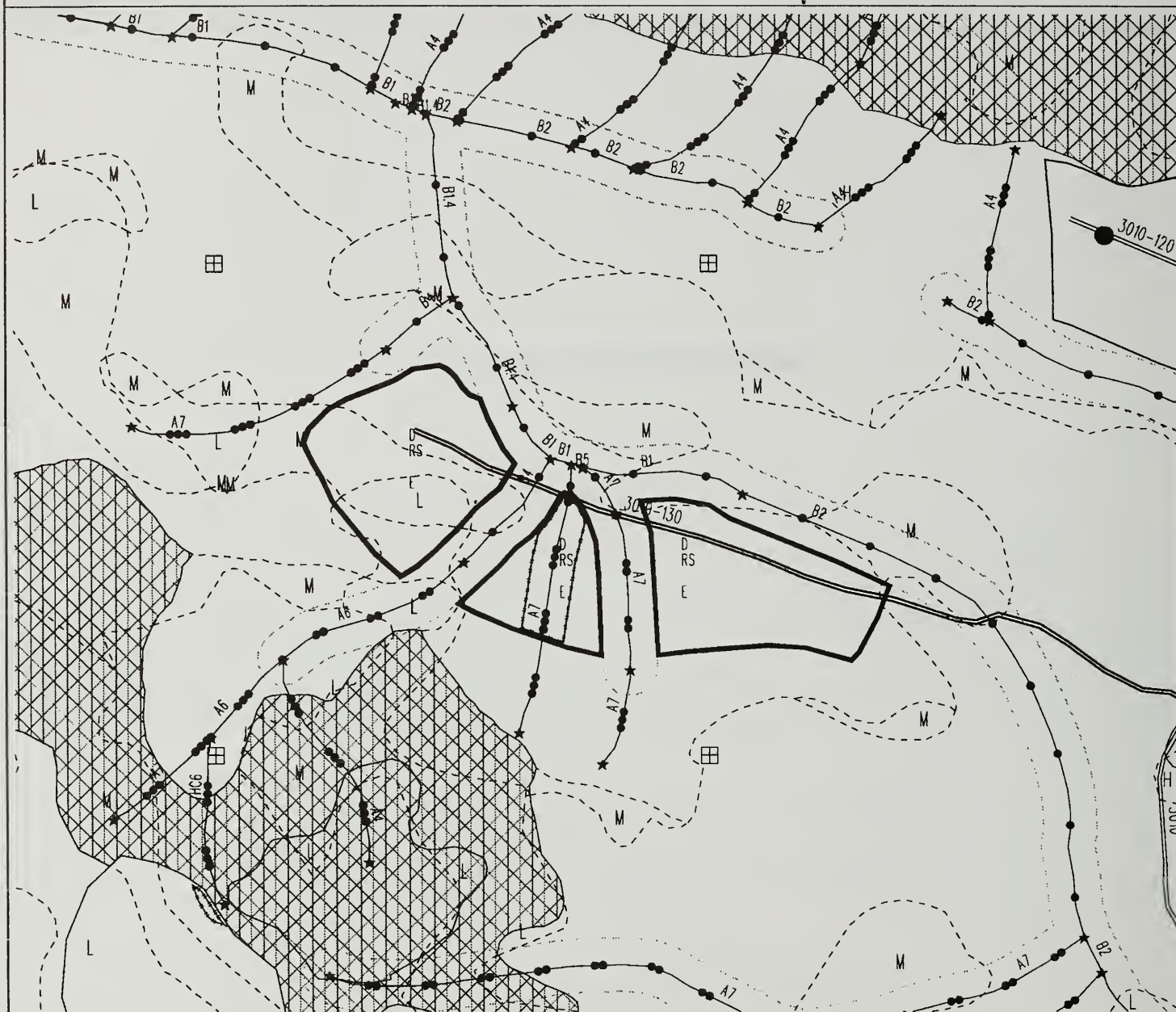
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 596

UNIT : 410

QUAD : C3-NW



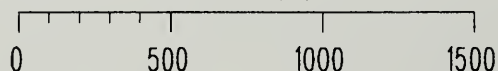
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrato
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Chonnel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 596	UNIT #: 410	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-193
ACRES: 24.9	VOL.: 352.1 MBF	LOGGING SYSTEM: Running Skyline/Swingyarder	
LANDSCAPE ZONE: Unit is located in the Rio Roberts Watershed.			
Timber/Vegetation	Field Review: J. Miller, 7/28/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock but includes a few cedar and spruce. Fairly dense understory vegetation. Moderately low volume, multi-canopy stand with < 50% canopy closure and relatively low site productivity. Many small drainages through unit. Some thin soil, poor soil drainage. Consider partial retention/seedtree harvest to promote spruce/cedar regeneration.			
Logging/Transportation	Field Review: S. Field/B. Flatz, 8/07/93	Office Review: M. Whitty	
Unit is accessed by Road #3010130. The recommended logging system is swing yarder with running skyline. Run additional profiles during final layout to assure the required partial suspension. Stream buffer within unit is not flagged. A 100 foot stream buffer is on the north half of NE boundary. Split yarding streams that are close to each other is a problem. Confirm resource concerns before final layout. Good economics.			
Watershed/Fisheries	Field Review: B. Romey/M. Minnillo, 7/15/93	Office Review: T. Stewart	
Stream 1 is a Class I - B/W, 100' TTRA buffer and 100' selective cut buffer, Stream 2 is a Class IIa - B/W, 100 TTRA buffer. Stream 2a is a Class III - O/W, provide slope break buffer treat adjacent areas to provide a reasonable assurance of windfirmness. Streams 3 and 5 - flagged B/W to 700' elevation, provide slope break buffers and treat adjacent areas to provide a reasonable assurance of wind firmness above 700' elevation. Stream 4, Class III with no protection required - treat as G/W flagged.			
Soils/Geology	Field Review: M. Minnillo, 7/15/93	Office Review: T. Stewart	
McGilvery soils present just to the south of unit. Low slopes, wet. Recommend partial suspension to minimize damage to wet slopes.			
Wildlife	Field Review: M. Minnillo, 7/15/93	Office Review: M. Hall	
Low deer/bear sign. Low wildlife sign throughout unit. Active beaver dams to north of unit. Structure will be maintained on Class I stream; retain Level 1 structure. Contiguous old-growth. Recommend additional 150' select harvest buffer along riparian area to maintain hiding/feeding cover.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig, T. Stewart	
Unit not seen from any priority travel route or use area. Keep below 700' due to visibility from Control Lake cabin. Unit in modified landscape. Not seen from Control Lake.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			

Interdisciplinary Team Recommendations

Note buffer requirements in watershed section. All Class I and II streams require 100' buffer. Class I and II streams inside unit did not have buffers flagged in field. Class III stream in unit does not require split yarding. Recommend partial suspension throughout unit. Recommend that additional profiles be conducted in unit to ensure that partial suspension can be achieved throughout unit. Below road retain trees < 15" DBH (Type E overstory removal) for wildlife corridor/structure. Type A clearcut above road. A designed landing is required in setting B, or the road alignment moved upslope. Mitigation measures for this unit are: F3,F4,F5,F6,F8,F10,W1,W5,W10,V1,V2,R1.

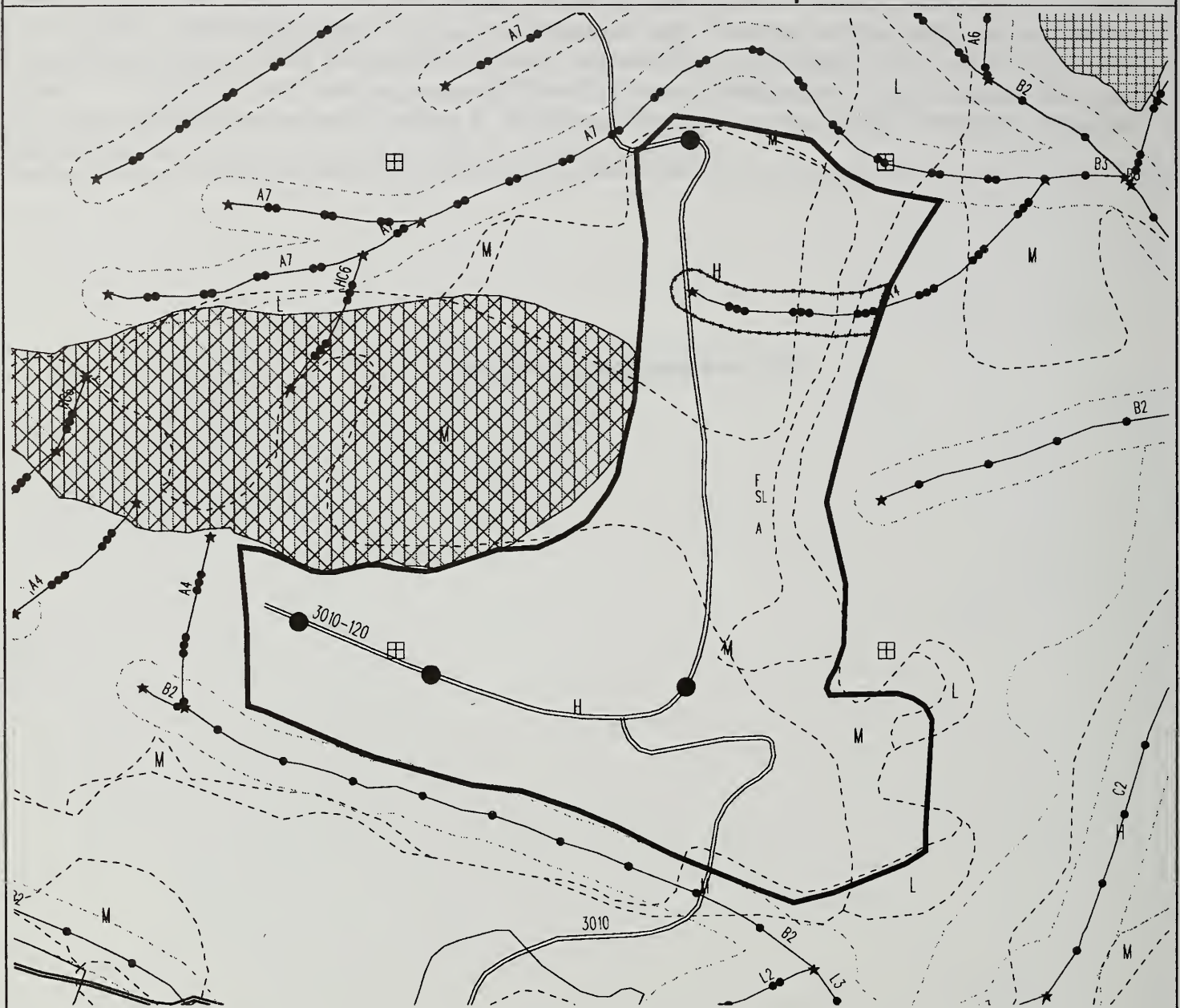
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD







VCU : 596

UNIT : 416

QUAD : C3-NE



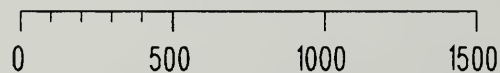
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- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
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★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

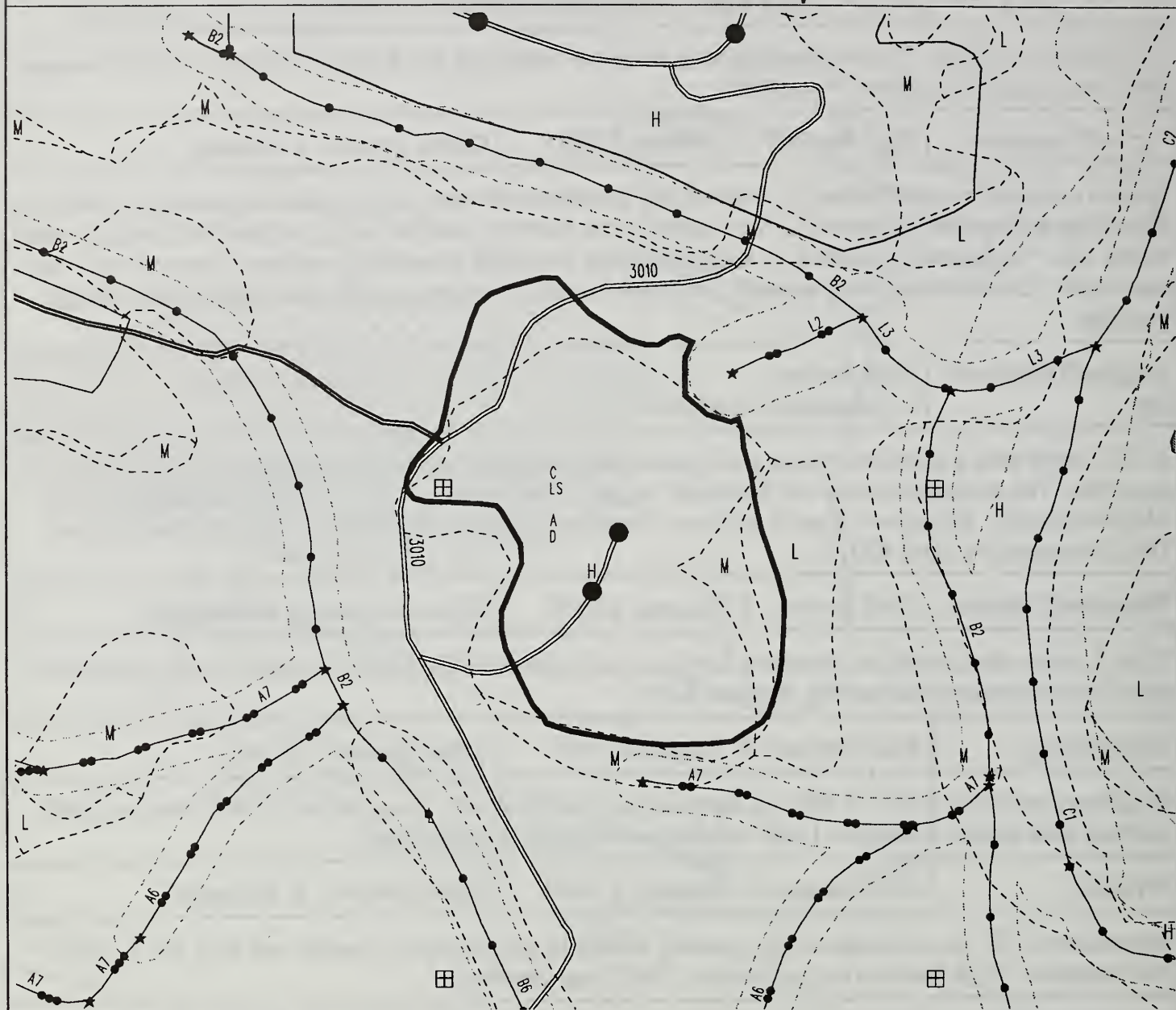
VCU #: 596	UNIT #: 416	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-191
ACRES: 101.3	VOL.: 2252.3 MBF	LOGGING SYSTEM: Live Skyline - Shotgun, Shovel	
LANDSCAPE ZONE: The southeast portion of unit is within the Rio Roberts Corridor, while the remainder is within the Rio Roberts Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 6/18/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration mostly on nurse logs and consists of hemlock. Very steep slope, relatively shallow soils, and poor soil drainage areas within unit. High erosive potential in southwest upper elevation areas due to extreme slope and soil water movement. Consider removing unstable area from harvest. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: C. Barnhart/J. Doyal, 6/14/93	Office Review: E. Urstadt	
A 100' tower with a slackline system will achieve partial suspension. 50% of logging is uphill; 50% is downhill. The southwest corner can be shovel logged. The unit above 900' to 1000' was dropped due to McGilvery soils. Blowdown is not a problem. Partial cut is not recommended. The economics are fair. Unit is accessed by Road #3010.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/13/93	Office Review: G. McNaughton	
Class I stream along southern boundary needs no-cut buffer of 100'. Class III stream in north portion of unit does not require split yarding (flagged G.W.).			
Soils/Geology	Field Review: R. Rogers, 6/13/93	Office Review: M. Hall	
McGilvery soils above 900' to 950' on steep slope with movement. Keep harvest to 900' level on north, east and west slopes, extends to 1,000' elevation or outcrop on south slope.			
Wildlife	Field Review: J. Knutzen, 6/13/93	Office Review: R. Fairbanks	
Recommend 100' no-cut buffer along boundary stream to maintain heavy beaver use area; Level 2 structure retention. High deer use in riparian area. Wolf scat observed.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Not seen from Control Lake.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Upper portion of unit excluded due to McGilvery soils. Class I stream along southern boundary requires 100' no-cut buffer. Class III streams in north portion of unit do not require split yarding. Type A clearcut in bulk of unit, Type B clearcut in Rio Roberts Corridor, with Type H shelterwood in southeast portion of unit within Rio Roberts Corridor. Mitigation measure for this unit are: F1, F3, F5, F6, F8, F10, W1, W2, W4, W5, W10, R1. Unit is only slightly larger than 100 acres, but includes a large portion that will be partial cut.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 596

UNIT : 417

QUAD : C3-NE



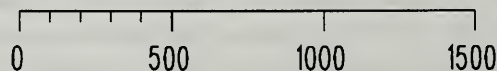
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- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 596	UNIT #: 417	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-191
ACRES: 42.8	VOL.: 1439.2 MBF	LOGGING SYSTEM: Swingyarder/Live Skyline with 100' Tower, Shovel	
LANDSCAPE ZONE: Eastern 1/2 of unit is within Rio Roberts Corridor. Western 1/2 of unit is within Rio Roberts Watershed.			
Timber/Vegetation	Field Review: B. Hasebe, 6/20/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Dense understory vegetation. Windthrow damage evident throughout the unit and is associated with shallow soils overlying bedrock. Little to no mistletoe evident in canopy. Steep slope and shallow soils overlying bedrock. Recommend full suspension where possible to minimize soil displacement.			
Logging/Transportation	Field Review: C. Barnhart/E. Urstadt/B. Flatz, 6/19/93	Office Review: E. Urstadt	
This unit is accessed by Rd #3010. One spur is needed. Three landings will be used. Shovel log the northwest corner. A 100' tower with shotgun system can achieve the required partial suspension for the rest of the unit. A swingyarder can be used along the road in the southwest corner. 100% of the unit is up-hill logging. Some tie-backs (or mobile tailhold) will be needed all around the unit. Blowdown is not a problem. Partial cut is possible. West of the flagged unit is a snag area that was excluded due to poor timber and lack of tailholds. It would make a good snag retention/wildlife area. The economics are good.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/14/93	Office Review: G. McNaughton	
No streams in unit; no concerns.			
Soils/Geology	Field Review: R. Rogers, 6/14/93	Office Review: G. McNaughton	
Slope sensitive to mass movement; require partial suspension, full suspension is preferable.			
Wildlife	Field Review: J. Knutzen, 6/14/93	Office Review: M. Hall	
Wolf use in unit and vicinity; heard wolf howls within approximately 1/4 mile of unit. Red-tailed hawk heard. Beaver ponds approximately 400' north and 600' east. Maintain Level 2 structure retention due to a surrounding matrix of natural fragmentation.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. V1.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Partial suspension required. Partial cutting not attractive due to windthrow concerns. Type A clearcut plus Type D clearcut leaving trees along irregular eastern unit boundary bordering muskegs below unit. Retain snag area on west-central unit boundary. Maintain 100' buffer on Class II streams at northeast and southeast areas of unit. Mitigation measures for this unit are: F1, F3, F5, F8, W1, W5, W10, R1.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 596

UNIT : 418

QUAD : C3-NE



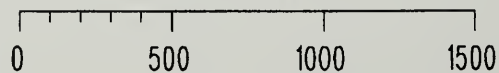
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- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 596	UNIT #: 418	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-190
ACRES: 8.3	VOL.: 93.1 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is outside of Rio Roberts Corridor but within the Rio Roberts Watershed.			
Timber/Vegetation	Field Review: M. Case, 6/19/93	Office Review: J. Goering	
Species composition predominantly cedar with hemlock; little spruce is present. Regeneration predominantly hemlock but includes cedar and spruce. Muskeg incursions incorporated with mixed species, low volume timber in some areas. Some thin soil, poor soil drainage areas.			
Logging/Transportation	Field Review: B. Flatz/S. Field, 6/22/93	Office Review: M. Whitty	
Accessed by Rd #71-82-27. There are three options: 1) Modify 10 acre flagged unit to 8 acres and log downhill to marked landing. Swingyard - maximum yarding is approximately 600'. Suspension required but not available. 2) Move road to provide an additional landing in unit. Same conditions as Option #1 except unit is 10 acres. 3) Helicopter log to attain required suspension.			
Watershed/Fisheries	Field Review: J. Knutzen, 6/14/93	Office Review: G. McNaughton	
One Class IIa stream southeast of unit needs 100' buffer, is greater than 100' from unit boundary already.			
Soils/Geology	Field Review: R. Rogers, 6/14/93	Office Review: G. McNaughton	
Moderate sensitivity to slope movement. Partial suspension required on steeper portions of unit.			
Wildlife	Field Review: J. Knutzen, 6/14/93	Office Review: M. Hall	
Heard red-tailed hawk within unit. Wolf use in area - tracks outside unit and howls heard within 1/4 mile of unit. Maintain Level 1 structure retention.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. V1.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Maintain 100' buffer on stream to east. Opportunity for possible spur road to top of unit to improve suspension. Type A clearcut. Mitigation measures for this unit are: F3, F4, F5, F8, F10, W5, W10, R1.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.1

UNIT : 406

QUAD : C3-NE



- | | | | |
|--|---|--|-----------------------------|
| | Revised Control Lake Project Boundary | | Lakes and Ponds |
| | Post-Field Unit Boundary w/ Setting Codes | | Second Growth Units |
| | Other Post-Field Unit Boundaries | | MMI 4 |
| | USFS Timber - Volstrata | | McGilvery > 41 |
| | Eagle Tree Buffer of 330ft | | Landings |
| | Existing & Rebuilt Roads | | Stream & Lake NoCUT Buffers |
| | F.S. Roads Under Construction | | |
| | Post-Field Proposed Roads | | |
| | Class 3 Treatment Zone | | |
| | Ahmu-Class 1 & Stream Chantypes | | |
| | Ahmu-Class 2 & Stream Chantypes | | |
| | Ahmu-Class 3 & Stream Chantypes | | |
| | Channel Type Change | | |

Scale in Feet

0 500 1000 1500

May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 406	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-165
ACRES: 43.9	VOL.: 740.8 MBF	LOGGING SYSTEM: Swingyard/Running Skyline	
LANDSCAPE ZONE: Unit is within Honker Block, Drumlin area, and 30 Road Corridor - also adjacent to Scenic River Corridor.			
Timber/Vegetation	Field Review: M. Case, 7/31/93	Office Review: J. Goering	
Species composition predominantly hemlock with an occasional spruce. Regeneration only on nurse logs and consists of predominantly hemlock with a few spruce. Heavy amount of mistletoe infection evident in canopy. Windthrow damage present in middle portion of unit. Possible salmonberry and brush incursions with soil disturbance based on existing densities. Some poor soil drainage areas.			
Logging/Transportation	Field Review: J. Estabrook/ C. Giles/M. Hoshall, 6/13/93	Office Review: C. Barnhart	
Unit is accessed by Rd #71-83-28.3. This road requires a 60' span bridge across a Class I stream with TTRA buffer; however bridge may be avoided by going west from unit and connecting with Rd #71-83-29.6. Partial suspension is possible with a running skyline, though not required. Partial cut is possible. Blowdown is not a problem. Unit is economical. A 100 foot stream buffer is flagged on the northern edge and the southeast edge of the unit.			
Watershed/Fisheries	Field Review: J. Knutzen/H. Sloan/C. Confer, 6/08/93	Office Review: T. Stewart	
Class I or IIa along north boundary - 100' buffer required. Class I along south boundary - FP3 on west portion requiring a 100' buffer. Class I - FP4 on east portion requiring a 200' buffer (100' no commercial, 100' no programmed). Lake/muskeg complex to north will require 100' no-cut buffer plus 400' selective cut buffer.			
Soils/Geology	Field Review: J. Knutzen/H. Sloan/C. Confer, 6/08/93	Office Review: T. Stewart	
Low gradient. No soils concerns.			
Wildlife	Field Review: J. Knutzen/H. Sloan/C. Confer, 6/08/93	Office Review: M. Hall	
30 acre sedge wetland with pond (>5 acres) to north of unit. Wetland runs into Thorne River. Light to moderate deer/bear sign noted. Two young bear skeletons identified. Duck (specification unknown) on pond. Retain Level 1 structure; contiguous old-growth. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO. Seen from Road 30 in Foreground. Maximum Modification VQO.			

Cultural/Lands	Field Review: D. Putnam, 93	Office Review: T.W. Greiser
Cultural - Unit partially or completely within high probability area for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.		
Interdisciplinary Team Recommendations		
100' buffer required on stream along northwest boundary. 200' buffer required on stream along southern boundary. Lake to north of unit requires 100' no-cut buffer from edge of lake/muskeg/forest boundary plus 400' selective cut buffer. Structure will be maintained by 400' selective cut buffer (Type I group selection) on north side removing mistletoe trees, plus a Type B clearcut on rest of unit because of mistletoe. Mitigation measures for this unit are: F4,F5,F8F10,W1,W2,W10,W11,V1,V2.		

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 414

QUAD : C3-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

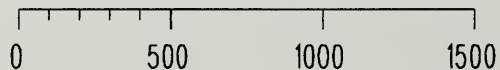
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 414	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-128
ACRES: 111.9	VOL.: 2374.9 MBF	LOGGING SYSTEM: 100' Tower/Live Skyline/Shotgun, Shovel	
LANDSCAPE ZONE: Located in Honker Watershed (Rio Beaver), but not in proposed Honker Block.			
Timber/Vegetation	Field Review: T. Stecher/S. Karstens, 7/2/93	Office Review: J. Goering	
Species composition predominantly hemlock with some spruce. Few cedar are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Steep slopes and some thin soils. Deeply channeled streams/V-notches.			
Logging/Transportation	Field Review: J. Estabrook/C. Giles/D. Keister, 7/02/93	Office Review: E. Urstadt, 9/13/93	
Unit is accessed by Roads 72-82-11 and 72-82.11.1. The southeast 3/4 of the unit can be logged using a 100' tower with shotgun system; however skyline tags and a mobile tailhold are needed. The western upper portions of the unit can be shovel and swing yarded to the upper road. There are blind leads in this western portion. The unit is good economically.			
Watershed/Fisheries	Field Review: C. Confer, 6/23/93	Office Review: T. Stewart	
Four Class III streams. Stream 1: G/W flagging - directional fall. Stream 2: O/W flagging. Stream 3: O/W flagging. Stream 4: O/W flagging. Slope break buffers will be implemented on streams 2,3,4, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: C. Confer, 6/23/93	Office Review: T. Stewart	
Partial suspension over entire unit. MMI4 soils originally mapped in upper portion of unit were not found in the field.			
Wildlife	Field Review: G. Green/C. Confer, 6/23/93	Office Review: M. Hall	
Entire unit will be modified to a diameter limit selection harvest designed to leave all trees less than 12" DBH.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Partial suspension required and achieved. Split yard Class III streams. Recommend Type E clearcut. Area above road will be included since this narrow strip of timber along a ridgetop has a very high probability of blowdown after harvest below. Remaining unit boundary locations are necessary for logical settings and the prevention of isolating timber. Mitigation measures for this unit are: F3, F5, F6, F8, W1, W2, W5, W6.			

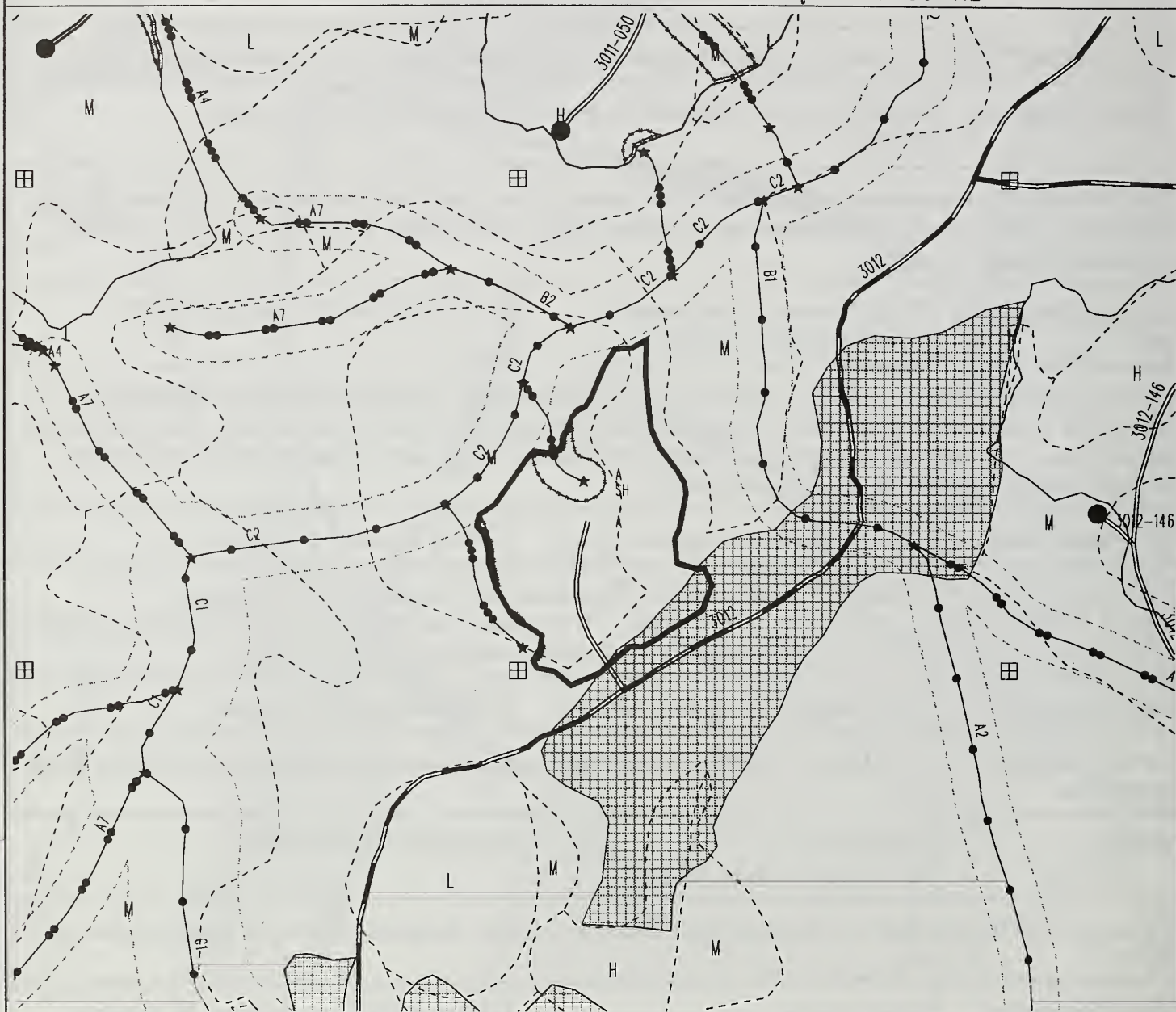
W5, W6.

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 416

QUAD : C3-NE



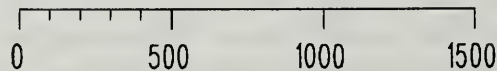
- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 416	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-126
ACRES: 17	VOL.: 344.6 MBF	LOGGING SYSTEM: Shovel Running Skyline	
LANDSCAPE ZONE: Unit is located in Honker Watershed (Rio Beaver) but not in proposed Honker Block.			
Timber/Vegetation	Field Review: B. Hedin/T. Stecher, 7/7/93	Office Review: J. Goering	
Species composition includes hemlock and cedar. Predominantly hemlock regeneration. Low to moderate amounts of mistletoe infection evident in canopy. Extensive stem decay evident in the large cedar. Some thin soil, poor soil drainage areas. Low volume, mixed-species, multi-canopy stand with < 50% canopy closure.			
Logging/Transportation	Field Review: R. Stuntzner/M. Hoshall, 6/05/93	Office Review: M. Whitty	
Requires 625' of easy construction by Rd #3012. Recommend shovel logging. AYD is approximately 250'. Stand is old and defective. Partial cut is not recommended. Approximately 800' of 100' buffer to northwest of unit.			
Watershed/Fisheries	Field Review: B. Romey/M. Minnillo, 6/08/93	Office Review: T. Stewart	
100' TTRA buffer required on Class I, Stream 1.			
Soils/Geology	Field Review: M. Minnillo, 6/08/93	Office Review: T. Stewart	
Low gradient. No concerns.			
Wildlife	Field Review: M. Minnillo, 6/08/93	Office Review: M. Hall	
Observed and heard sapsucker in unit. High use wildlife travel corridor along creek. Recommend Level 1 structure retention in unit.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
100' TTRA buffer on stream along northwest side of unit. Recommend Type A clearcut because of thin soils, mistletoe, and decay. Mitigation measures for this unit are: F5, F8, W1, W5.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

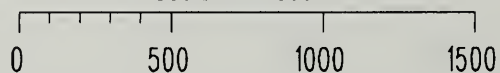
UNIT : 417

QUAD : C3-NE



- | | | | |
|--|---|--|-----------------------------|
| | Revised Control Lake Project Boundary | | Lakes and Ponds |
| | Post-Field Unit Boundary w/ Setting Codes | | Second Growth Units |
| | Other Post-Field Unit Boundaries | | MMI 4 |
| | USFS Timber - Valstrata | | McGilvery > 41 |
| | Eagle Tree Buffer of 330ft | | Landings |
| | Existing & Rebuilt Roads | | Stream & Lake NoCUT Buffers |
| | F.S. Roads Under Construction | | |
| | Post-Field Proposed Roads | | |
| | Class 3 Treatment Zone | | |
| | Ahmu-Class 1 & Stream Chantypes | | |
| | Ahmu-Class 2 & Stream Chantypes | | |
| | Ahmu-Class 3 & Stream Chantypes | | |
| | Channel Type Change | | |

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

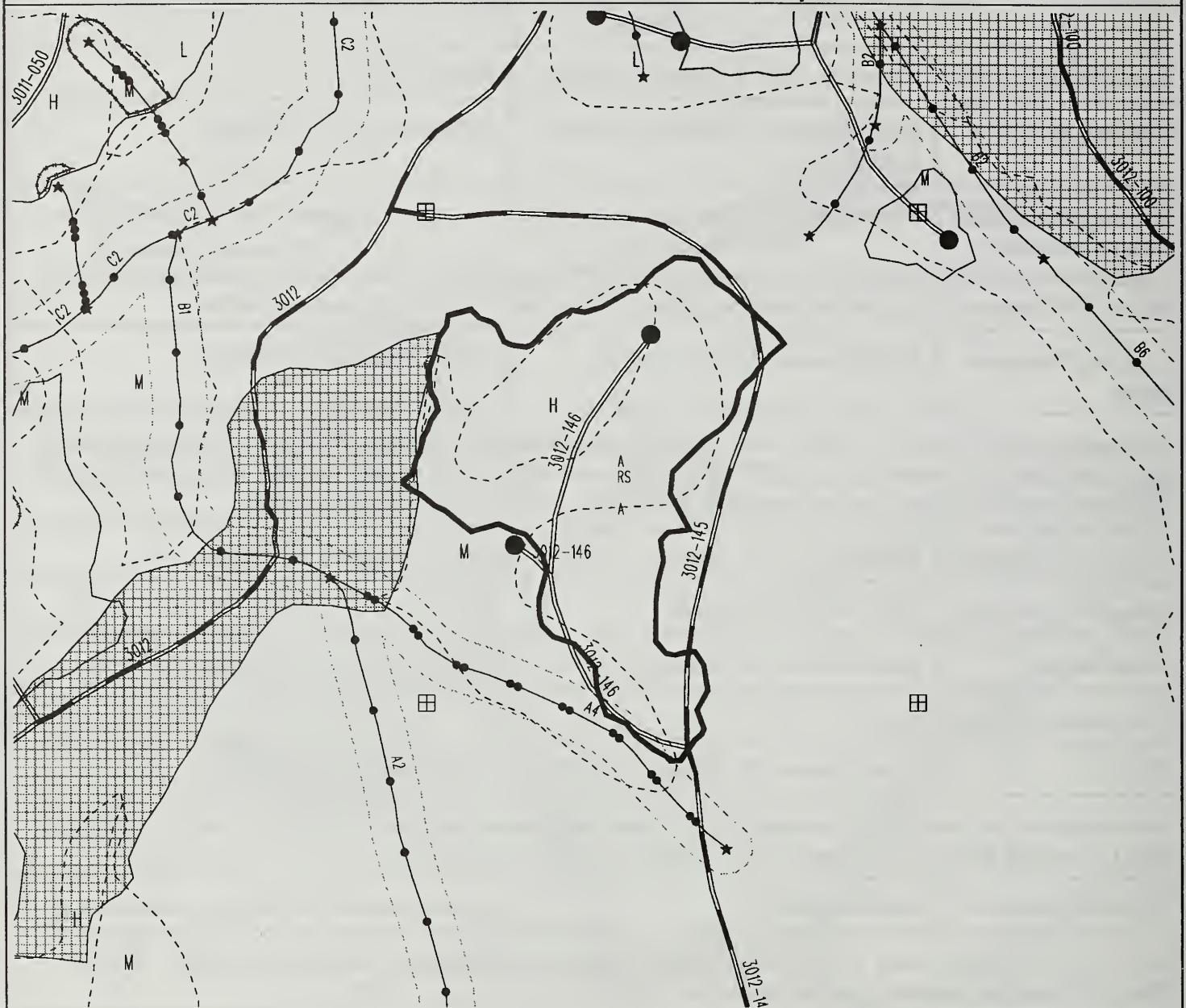
VCU #: 597	UNIT #: 417	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-27
ACRES: 9	VOL.: 130 MBF	LOGGING SYSTEM: Running Skyline/Swingyard, Shovel	
LANDSCAPE ZONE: Unit is located in Drumlin area and 30 Road Corridor.			
Timber/Vegetation	Field Review: G. Hedin/B. Hasebe, 8/12/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Predominantly hemlock regeneration. Light amount of mistletoe infection evident in canopy. Low volume, mixed-species, multi-canopy stand with < 50% canopy closure in the eastern portion. Poor regeneration in the eastern portion.			
Logging/Transportation	Field Review: P. Scott, 9/4/93	Office Review: E. Urstadt	
Accessed by Rd #71-83-30.9. 940' of easy construction with short pitches of 15% favorable and 12% adverse conditions. Approximately 1,200' of existing road will require reconstruction. Swingyard to north landing all uphill. Shovel log the remainder to the road. MYD is approximately 350'.			
Watershed/Fisheries	Field Review: B. Romey, 8/01/93	Office Review: T. Stewart	
Stream 1 is a Class I - B/W, 100' TTRA buffer.			
Soils/Geology	Field Review: B. Romey, 8/01/93	Office Review: T. Stewart	
Low slopes, no soil concerns.			
Wildlife	Field Review: B. Romey, 8/01/93	Office Review: M. Hall	
Entire unit will be modified to a diameter limit selection harvest designed to meet the Goshawk/Marten S&G's for high risk provinces and VCU's greater than 33% harvested.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO. Visible from 30 Road but screened by trees in stream buffer.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Stream to north of unit requires 100' buffer. Type E harvest recommended to ensure successful regeneration. Transition to muskeg on east also provides snags and habitat. Mitigation measures for this unit are: F5, F8, W2, W6, V1, V2.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 418

QUAD : C3-NE



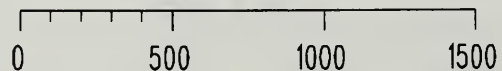
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 418	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-28
ACRES: 34	VOL.: 312 MBF	LOGGING SYSTEM: Swingyard/Running Skyline	
LANDSCAPE ZONE: Unit is in Honker Watershed (Rio Beaver) but not in proposed Honker Block.			
Timber/Vegetation	Field Review: T. Stecher, 7/29/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock and includes a few cedar but is generally lacking spruce. Alaska yellow cedar decline evident.</p> <p>Fairly dense understory vegetation in the southern portion. Fairly dense salal present in the southwest. Low volume, mixed-species, multi-canopy stand with < 50% canopy closure in the southwest portion. Consider partial retention/seedtree harvest to promote regenerative success in the southwest portion.</p>			
Logging/Transportation	Field Review: J. Doyal/J. Estabrook/S. Field, 6/10/93	Office Review: M. Whitty	
Swing yarding (70%) uphill is the recommended harvest system. The unit is accessed by Rd #71-83-30.9 and Rd #71-83-30.9A which are easy construction. There may be blowdown problems in southeast corner; possibly leave some unmerchantable trees. Economics are poor.			
Watershed/Fisheries	Field Review: B. Romey/ M. Minnillo, 6/08/93	Office Review: T. Stewart	
Stream at south side of unit is Class II - buffer with 100' no-cut.			
Soils/Geology	Field Review: M. Minnillo, 6/08/93	Office Review: T. Stewart	
Slopes are less than 10%. No concerns.			
Wildlife	Field Review: M. Minnillo, 6/08/93	Office Review: M. Hall	
Entire unit will be modified to a diameter limit selection harvest designed to meet the Goshawk/Marten S&G's for high risk provinces and VCU's greater than 33% harvested.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			
Leave all unmerchantable trees at southwest corner to promote regeneration. Type E clearcut recommended. Boundary modified to buffer Class II stream south of unit. Mitigation measures for this unit are: F5, F8, W2, W6.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 419

QUAD : C3-NE



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 419	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-27
ACRES: 7	VOL.: 123.5 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is within Honker Watershed (Rio Beaver) but not in proposed Honker Block.			
Timber/Vegetation	Field Review: J. Miller, 6/12/93	Office Review: J. Goering	
Species composition includes hemlock, spruce, and cedar. Predominantly hemlock regeneration. Moderate amount of stem decay evident in cedar. Fairly dense understory vegetation.			
Logging/Transportation	Field Review: K. Jehnke/E. Urstadt, 6/07/93	Office Review: K. Jehnke	
Unit is accessed by Road #71-93-30.9 and one spur. This unit should be swing yarded using a running skyline. One hundred foot stream buffers split unit into two settings. Road enters buffer but does not cross stream. Fair economics. Partial cut is feasible.			
Watershed/Fisheries	Field Review: B. Romey/ M. Minnillo, 6/08/93	Office Review: T. Stewart	
100' TTRA buffer required on Class I, Stream 1. 100' TTRA buffer required on Class I, Stream 2.			
Soils/Geology	Field Review: M. Minnillo, 6/08/93	Office Review: T. Stewart	
Slopes are generally less than 20%. No concerns.			
Wildlife	Field Review: M. Minnillo, 6/08/93	Office Review: M. Hall	
No concerns. Recommend Level 1 structure retention in unit.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
100' TTRA buffer required on both Class I streams - northeast side of unit and within unit. Recommend Type B clearcut. Mitigation measures for this unit are: F5, F8, F10, W1, W4.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 420

QUAD : C3-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 22, 1998

VCU #: 597	UNIT #: 420	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-27
ACRES: 9	VOL.: 180 MBF	LOGGING SYSTEM: Shovel/Swingyarder/Running Sky-line	
LANDSCAPE ZONE: Unit is in the Rio Beaver watershed.			
Timber/Vegetation	Field Review: G. Hedin, 6/24/93	Office Review: J. Goering	
Species composition predominantly cedar with hemlock. Little spruce is present. Regeneration predominantly hemlock but includes a few cedar. Dense understory vegetation. Muskeg incursions incorporated with mixed species, low volume timber in some areas. Minimize soil compaction/displacement and avoid yarding over bog/muskeg areas.			
Logging/Transportation	Field Review: J. Spolar/D. Goude 6/24/93	Office Review: E. Urstadt, 9/23/93	
Recommend combination of cable and shovel logging. Cable system analyzed was running skyline with 50' tower. Need additional spur to west side of unit to facilitate shovel logging. Partial suspension achievable. Blowdown is not a problem. Accessed by Rd #3012125 which is 1,842' long. Propose approximately 800' of additional spur.			
Watershed/Fisheries	Field Review: R. Rogers, 6/22/93	Office Review: T. Stewart	
No streams in unit.			
Soils/Geology	Field Review: R. Rogers, 6/22/93	Office Review: T. Stewart	
Partial suspension over entire unit due to presence of McGilverly soils and glacial till. Minimize cuts due to road building on unstable glacial till below 600' elevation.			
Wildlife	Field Review: G. Green, 6/22/93	Office Review: R. Fairbanks	
No major concerns other than split yard and directional fall from muskegs within unit.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type B clearcut because of previous harvest in area. Achieve partial suspension in unit. Mitigation measures for this unit are: F3, F4, W4.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 421

QUAD : C3-NE



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 421	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-27
ACRES: 23	VOL.: 547 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is located in Rio Beaver Watershed.			
Timber/Vegetation	Field Review: S. Karstens, 7/3/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Fairly dense understory vegetation. Some salmonberry and salal present. Some thin soil, poor soil drainage areas. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: B. Webster/T. Wetzel, 6/21/93	Office Review: K. Jehnke	
Unit is accessed by Road #71-83-29.4. Recommend highlead with 70 foot tower or a large swing yarder. Eighty percent is uphill logging. Run additional profiles during final layout to check feasibility of partial cut. A 100 foot buffer is within the center-north portion of the unit.			
Watershed/Fisheries	Field Review: R. Rogers, 6/22/93	Office Review: T. Stewart	
Stream 1 is Class II - needs 100' buffer, flagged blue/white. Stream 2 is Class III - split yard. Slope break buffers will be implemented along stream 2, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: R. Rogers, 6/22/93	Office Review: T. Stewart	
Minimize road cutting and cut back angles to minimize sliding on glacial tills. No other concerns.			
Wildlife	Field Review: G. Green, 6/22/93	Office Review: M. Hall	
Entire unit will be modified to a diameter limit selection harvest designed to meet the Goshawk/Marten S&G's for high risk provinces and VCU's greater than 33% harvested. 100' buffer between unit and 1966 clearcut to maintain a high use travel corridor for deer and bears. The 1966 clearcut is virtually impenetrable. A 100' clear strip will allow north/south movement. Otherwise, you create a mile-long "barrier". Wildlife buffer recommended on the western edge to clearcut to maintain high bear and deer use. Level 1 structure retention. Goshawk survey conducted - no detections.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Maximum Modification VQO. Seen from Road 30 in middleground.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
TTRA 100' buffer along Class I stream for about 600' into unit. Remainder of stream is a Class III which should be split yarded. Type E clearcut. Mitigation measures for this unit are as follows: F5, F8, W1, W2, W6, V1, V2.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 422

QUAD : C3-NE



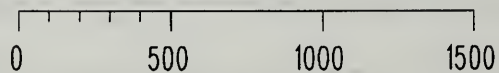
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
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- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 422	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-165
ACRES: 26	VOL.: 719 MBF	LOGGING SYSTEM: Running skyline	
LANDSCAPE ZONE: Unit is located within the Drumlin Area, and 30 Road Corridor.			
Timber/Vegetation	Field Review: T. Stecher/B. Hasebe, 6/14/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration mostly on nurse logs and consists of hemlock. Low to moderate amounts of mistletoe infection evident in canopy. Moderate stem decay evident in the large cedar. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: J. Doyal/J. Estabrook, 8/15/93	Office Review: E. Urstadt	
Two spurs are needed to harvest this unit. Harvest system is uphill logging using Running Skyline on medium sized tower. Alternative tailholds or tie-backs may be needed in the northeast and southeast. Blowdown is not a problem. Partial cutting is not recommended. Unit is economical.			
Watershed/Fisheries	Field Review: J. Knutzen/B. Romey, 6/07/93	Office Review: G. McNaughton	
100' buffer on lake with additional 400' selective harvest buffer. 100' buffer on stream to the south.			
Soils/Geology	Field Review: B. Romey, 6/08/93	Office Review: G. McNaughton	
Flat; no unstable soils.			
Wildlife	Field Review: C. Confer/H. Sloan/K. Smayda, 6/08/93	Office Review: M. Hall	
Buffer two wetlands found on western and southwestern end of unit (100') due to importance of habitat to wildlife. Recent heavy bear use documented as well as wolf sign. Lake is approximately 40 acres and east of unit. Western toad observed by lake. Game trail circled edge of lake. Woodpecker cavities identified. Buffer muskegs 1 and 2 (100'). Retain Level 1 structure. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Adjacent to the main road and a lake with recreational opportunities. Seen from Road 30 in Foreground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Lake requires 100' no harvest buffer and 400' selective cut buffer. Class I stream south of unit requires 100' no-cut buffer. Type B clearcut because of mistletoe. Remove mistletoe infested trees where possible. Mitigation measures for this unit are: F4, F5, F8, W4, W11, V1, V2.

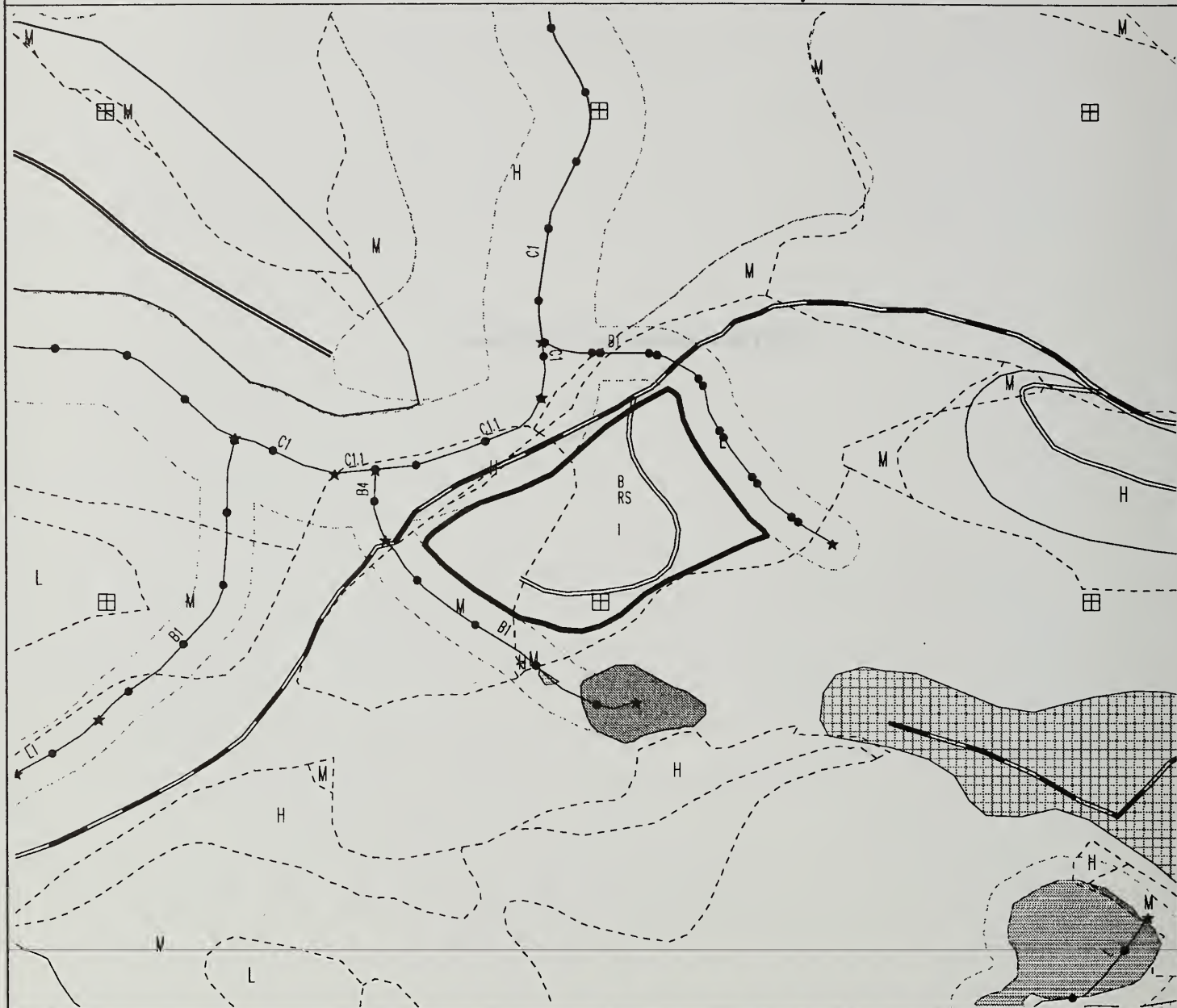
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 424

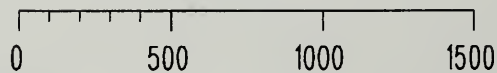
QUAD : C3-NE



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- USFS Timber - Valstrata
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- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 424	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-165
ACRES: 15.9	VOL.: 237.5 MBF	LOGGING SYSTEM: Running Skyline/Swingyarder	
LANDSCAPE ZONE: Unit is within the Drumlin area, second 1/4 mile of Thorne River Scenic Corridor, the proposed Honker Block, and in 30 Road Corridor.			
Timber/Vegetation	Field Review: M. Case, 8/13/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Fairly dense understory vegetation. Some poor soil drainage areas. Muskeg inclusions within the unit. Low to moderate amounts of mistletoe infection evident in canopy. Harvest all mistletoe infected hemlock and cut infected regeneration. Promote spruce/cedar regeneration through planting or seedtree harvest.			
Logging/Transportation	Field Review: J. Estabrook/ M. Hoshall/C. Giles, 6/13/93	Office Review: E. Urstadt	
Unit is accessed by Road #3000. A swing yarder can harvest the entire unit. Partial suspension is possible, although not required. The SE boundary will need tie-backs for tailholds. Partial cut is feasible. A 100 foot stream buffer is on the SW boundary. Determine stream class on NE during final layout; no buffer is flagged. Fair economics.			
Watershed/Fisheries	Field Review: H. Spolar/C. Confer/ K. Smayda, 6/08/93	Office Review: T. Stewart	
Class I stream on west end of unit - 100' buffer required plus 100' selective harvest. Class IIa stream on east of unit - 100' buffer required. Lake south of unit does require a 100' no cut and 400' selective cut buffer.			
Soils/Geology	Field Review: H. Solan/C. Confer/ K. Smayda, 6/08/93	Office Review: T. Stewart	
No soil concerns.			
Wildlife	Field Review: H. Solan/C. Confer/ K. Smayda, 6/08/93	Office Review: M. Hall	
Level 1 structure retention. Lake south corner of unit. Low wildlife use noted. No special concerns. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Seen from Road 30 in Foreground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Class I stream on west side of unit requires 100' TTRA buffer plus additional 100' selective harvest (Type I). Class II stream on east side requires 100' buffer. Lake south of unit requires a 100' no-cut and 400 foot selective cut buffer. Shelterwood cut, Type I, leaving groups between yarding corridors. Remove mistletoe infected hemlock. Mitigation measures for this unit are: F5, F8, W1, W2, W10, V1, V2.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 425

QUAD : C3-NE



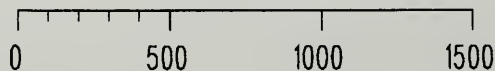
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 425	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-164
ACRES: 18	VOL.: 400 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is within second 1/4 mile of Thorne River Scenic Corridor, in the Drumlin Area, the 30 Road Corridor, and the Angel Lake Corridor.			
Timber/Vegetation	Field Review: S. Karstens, 8/16/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration mostly on nurse logs and consists of hemlock. Lacking spruce and western red cedar regeneration. Low to moderate amounts of mistletoe infection evident in canopy. Good advanced regeneration (candidate for release) consisting of hemlock. Salmonberry present throughout area. Harvest all mistletoe infected hemlock and cut infected regeneration. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: E. Urstadt/K. Martin, 6/28/93	Office Review: E. Urstadt	
Unit can be swingyarded to continuous roadside landing. Unit is accessed by Rd #71-83-27.3 which has 1,800' of easy construction. Partial cut is feasible. Unit is adjacent to and visible from USFS Road 30. A swingyarder is recommended to harvest the entire unit. A running skyline will assure partial suspension on most of the unit, although partial suspension is not required. Guystumps and tailstumps are good. Blowdown is not a problem. Good economics.			
Watershed/Fisheries	Field Review: J. Metzler/R. Rogers, 6/24/93	Office Review: T. Stewart	
No streams in or adjacent to unit.			
Soils/Geology	Field Review: J. Metzler/R. Rogers, 6/24/93	Office Review: T. Stewart	
No special concerns. No instability noted.			
Wildlife	Field Review: R. Rogers, 6/24/93	Office Review: M. Hall	
No special concern - retain Level 1 structure retention. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Seen from Road 30 in Foreground. Maximum Modification VQO.			
Cultural/Lands	Field Review: S. Moorhead, 7/22/93	Office Review: T.W. Greiser	

Cultural - Unit is partially or completely within high probability area for cultural resources.

Lands - No state/private or encumbered lands occur adjacent to unit.

Interdisciplinary Team Recommendations

Shelterwood cut, Type I, leaving groups between yarding corridors. Remove mistletoe infected hemlock. Mitigation measures for this unit are: F8, W2, W10, V1, V2.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 426

QUAD : C3-NE



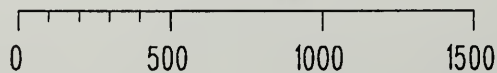
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chatypes
- Ahmu-Class 2 & Stream Chatypes
- Ahmu-Class 3 & Stream Chatypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 426	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-164
ACRES: 8	VOL.: 150.7 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is within the Rio Beaver Watershed.			
Timber/Vegetation	Field Review: S. Karstens, 7/1/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration mostly on nurse logs and consists of hemlock. Sparse spruce and western red cedar regeneration. Salal present throughout area.			
Logging/Transportation	Field Review: T. Wetzel/J. Herzberg, 8/28/93	Office Review: E. Urstadt	
Unit is accessed by Road #3013140. Shovel log to road. Partial cut is feasible. Unit is approximately five acres. Recommend cutting merchantable timber only. This would improve economics. Fair economics.			
Watershed/Fisheries	Field Review: B. Romey, 6/28/93	Office Review: T. Stewart	
Stream 1 needs a 100' buffer.			
Soils/Geology	Field Review: M. Minnillo, 6/28/93	Office Review: T. Stewart	
Dry site with low slopes. No windthrow or slumps.			
Wildlife	Field Review: M. Minnillo, 6/28/93	Office Review: M. Hall	
Moderate deer use. Good hiding and bedding cover for deer and bear. Woodpecker sign observed. Unit serves as a travel corridor between muskegs. Recommend partial cutting entire unit to maintain cover. Level 3 structure retention. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations		Reviewed By:	
Type H shelterwood to provide structure and help provide for regeneration. Mitigation measures for this unit are: F4, F5, F8, W2, W10, W11.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 427

QUAD : C3-NE



- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes

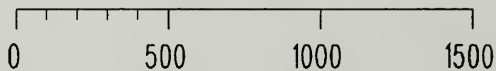
★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

--- Stream & Lake NoCUT Buffers

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 427	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-164
ACRES: 25	VOL.: 534.3 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is within Rio Beaver Watershed.			
Timber/Vegetation	Field Review: J. Goering, 7/8/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Sparse spruce and western red cedar regeneration. Many bogs, small streams, and poor soil drainage areas.</p> <p>Good advanced regeneration (candidate for release) consisting of hemlock and cedar. Windthrow potential minimal.</p> <p>Promote spruce and cedar regeneration through shelterwood or seed tree harvest. Minimize soil compaction/displacement and avoid yarding through bog/stream areas.</p>			
Logging/Transportation	Field Review: T. Wetzel/ J. Herzberg, 8/28/93	Office Review: E. Urstadt	
Unit is accessed by Road #3013140. Recommend swing yarding the north 2/3 and shovel logging the south 1/3. Partial cut is feasible. Partial suspension is possible on 80% of the swing yard setting. A 100 foot stream buffer is along the north boundary and lakes. The south boundary has a 200 foot stream buffer due to a slope break. Fair economics.			
Watershed/Fisheries	Field Review: B. Romey, 6/28/93	Office Review: T. Stewart	
Both lakes need 100' buffer plus 400' selective harvest buffer. Stream 2 needs 100' buffer. Stream 1 on south side needs 100' buffer plus 100' no-programmed harvest buffer.			
Soils/Geology	Field Review: M. Minnillo, 6/28/93	Office Review: T. Stewart	
Low, dry slopes, No concerns. No stability problems.			
Wildlife	Field Review: M. Minnillo, 6/28/93	Office Review: M. Hall	
<p>Snags will be maintained in stream and lake buffers, as well as riparian corridor along the southern unit boundary.</p> <p>Level 1 structure retention. Goose scat seen in unit. Lakes to the northeast and northwest of unit. Avoid disturbance of trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area. Lake adjacent to unit provides recreational opportunities.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			

Lakes northeast and northwest require 100' no harvest buffer and 400' selective harvest. Stream on south side requires 100' no harvest and 100' no-programmed harvest buffer. Stream on north side requires 100' buffer. Type E overstory removal in main unit; type I group selection in lake selective cut buffer. Mitigation measures for this unit are: F4, F5, F8, W2, W10, W11.

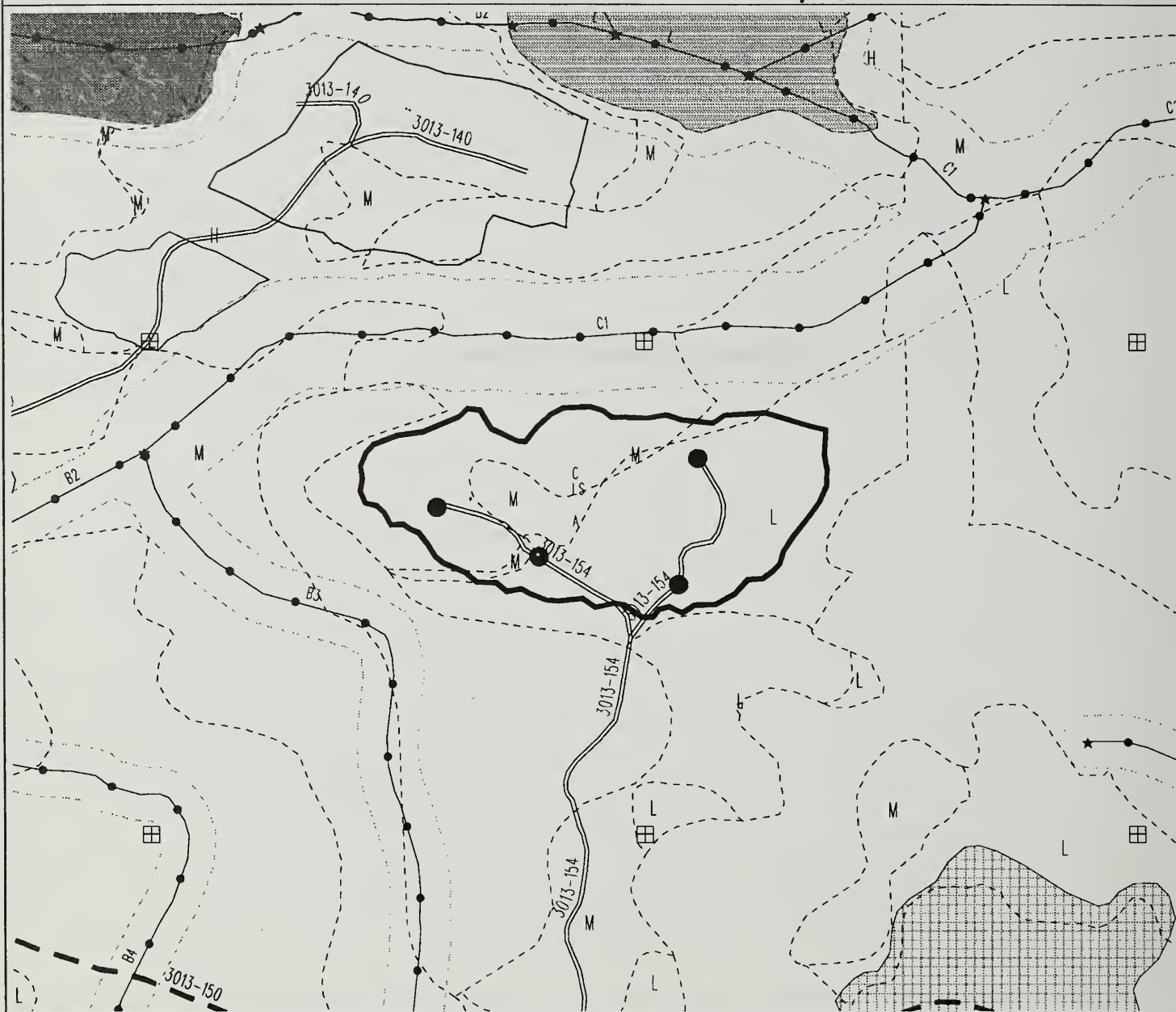
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 428

QUAD : C3-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

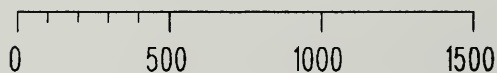
★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

Stream & Lake NoCUT Buffers

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

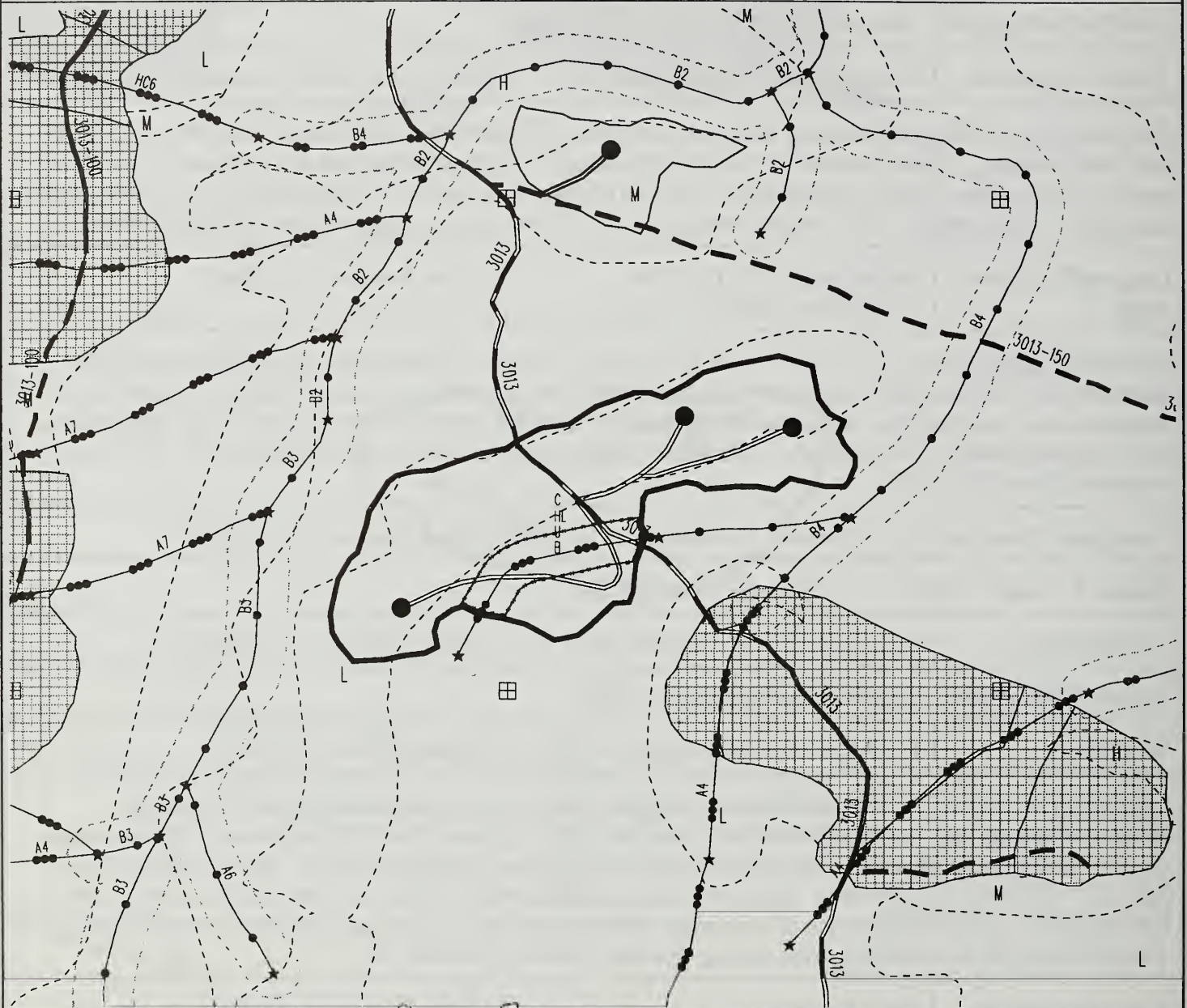
VCU #: 597	UNIT #: 428	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-164
ACRES: 27	VOL.: 443 MBF	LOGGING SYSTEM: Live Skyline with 70' Tower	
LANDSCAPE ZONE: Unit is within Rio Beaver Watershed.			
Timber/Vegetation	Field Review: B. Hasebe, 7/5/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Predominantly hemlock regeneration. Sparse western red cedar regeneration. Muskeg incursions incorporated with mixed species, low volume timber in some areas. Low to moderate amounts of stem decay evident in hemlock and cedar. Salal present in the central portion of unit. Promote spruce regeneration through planting.			
Logging/Transportation	Field Review: E. DeWilde/ J. Herzberg, 8/30/93	Office Review: K. Jehnke	
Proposed logging system is 70' tower with live skyline. Shovel log flat areas. Maximum yarding distance of 600'; 100% uphill yarding. Partial suspension is available over most of the unit. If partial suspension is not required, this unit could be highleaded. Smaller yarder could be utilized with the construction of approximately 500' of road. A slackline system is required if the unit is partial cut. Unit is accessed by Road #3013154.			
Watershed/Fisheries	Field Review: B. Romey, 6/28/93	Office Review: A. Wolfson	
Stream 1, Class I - 200' no-cut buffer for channel type C1.			
Soils/Geology	Field Review: M. Minnillo, 6/28/93	Office Review: A. Wolfson	
Slopes of 0% to 20%. Southwest portion of unit is wet.			
Wildlife	Field Review: M. Minnillo, 6/28/93	Office Review: M. Hall	
Western two settings will be modified to a diameter limit selection harvest designed to meet the Goshawk/Marten S&G's for high risk provinces and VCU's greater than 33% harvested. Maintain east unit boundary out of muskeg to maintain hiding/bedding cover for deer and bear. Recommend at least 50' to 75' no-cut on this muskeg. Snags will be maintained within Class I stream buffer; Level 1 structure retention. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Stream on north side of unit requires 200' no harvest buffer. Type E clearcut. Mitigation measures for this unit are: F4,F5,F8,W2,W6,W10,W11.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 430

QUAD : C3-NE



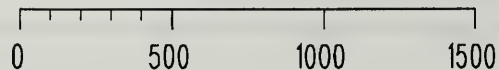
- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MM1 4
- McGilvery > 41
- Landings
- Stream & Lake NaCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 430	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-164
ACRES: 29	VOL.: 250.5 MBF	LOGGING SYSTEM: Highlead with 70' Tower	
LANDSCAPE ZONE: Unit is within Rio Beaver Watershed.			
Timber/Vegetation	Field Review: M. Case/ J. Miller, 6/17/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock but includes a few cedar and spruce. Muskeg incursions incorporated with mixed species, low volume, multi-canopy stand with < 50% canopy closure and low site productivity. Alaska yellowcedar decline evident. Fairly dense understory vegetation including salal.			
Logging/Transportation	Field Review: J. Doyal/ J. Herzberg, 6/15/93	Office Review: K. Martin	
Ninety percent uphill cable logging. Field crew suggested 90' tower and a live skyline, but it appears that a 70' tower or swingyarder would be satisfactory. Yarding distances are relatively short - 400' to 600'. Maximum yarding distance appears to be 1,000' from the unit map. Approximately 30% of unit may be shovel logged. No partial suspension requirements noted. Partial suspension may be difficult northeast of landing due to low slopes. Guy stumps fair to poor, may require tiebacks. Tailholds are poor along most of the boundaries except good along east and south ends. Poor tailtrees. No blind leads or leave areas noted. Field crew verification suggests clearcut due to residual tree damage.			
Watershed/Fisheries	Field Review: M. Minnillo, 6/10/93	Office Review: A. Wolfson	
No streams within unit. Class I stream on east side of unit requires 100' no harvest and 50' selective cut buffer.			
Soils/Geology	Field Review: M. Minnillo, 6/10/93	Office Review: A. Wolfson	
No soils concerns. Gentle slopes.			
Wildlife	Field Review: M. Minnillo, 6/10/93	Office Review: M. Hall	
Deer use low in unit. Two sandhill cranes flew out of muskeg north of west portion of unit; may be nesting in area. Avoid muskegs on northwest and southwest sides of unit. Retain Level 2 structure due to narrowness of affected old-growth patch and proximity to several large HCC's.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Class I stream to east of unit requires 100' no harvest and additional 50' selective harvest buffer. Type B clearcut to retain Level 2 structure. Mitigation measures for this unit are: F4, F5, F8, W1, W4, W10, W11.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 434

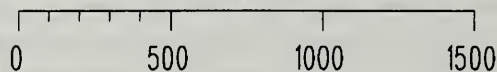
QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrato
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chontypes
- Ahmu-Class 2 & Stream Chontypes
- Ahmu-Class 3 & Stream Chontypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

VCU #: 597	UNIT #: 434	QUARTER QUAD: C2NW	PHOTO YR/#: 1991/690-34
ACRES: 53	VOL.: 1104.1 MBF	LOGGING SYSTEM: Swingyarder/Running Skyline	
LANDSCAPE ZONE: Unit is within Angel Lake Corridor.			
Timber/Vegetation	Field Review: T. Stecher, 7/10/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Light amount of mistletoe infection evident in canopy.</p> <p>Some thin soil, poor soil drainage areas.</p>			
Logging/Transportation	Field Review: T. Wetzel/D. Foster, 8/24/93	Office Review: M. Whitty	
<p>Unit is accessed by Road #3013155. Recommend swingyarder with running skyline. Profiles will be needed during final layout to confirm that full suspension will occur over the stream within unit. A 100 foot stream buffer is along the NW and NE boundaries.</p>			
Watershed/Fisheries	Field Review: S. Tanguay, 6/28/93	Office Review: T. Stewart	
<p>Stream along north and east boundary requires 100' no commercial + 100' no program cut buffer. Lake to southeast requires 100' no cut plus 400' of selective cut buffer. Stream on west boundary requires 100' no cut buffer. Class III stream in westcentral portion of unit will require a slope break buffer, adjacent areas will be treated to provide a reasonable assurance of windfirmness.</p>			
Soils/Geology	Field Review: S. Tanguay, 6/28/93	Office Review: T. Stewart	
<p>Low gradient, 0-15%, slopes. No stability concerns.</p>			
Wildlife	Field Review: S. Tanguay, 6/28/93	Office Review: M. Hall	
<p>Heavy bear use and moderate deer use in unit. Bald eagle roost site identified. Wolf sign identified. Retain Level 1 structure; required buffers will help maintain structure. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
<p>Unit not seen from any priority travel route or use area.</p> <p>Lake adjacent to unit provides some recreational opportunities.</p>			
Cultural/Lands	Field Review: S. Moorhead, 7/26/93	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit inventoried for cultural resources due to location within high probability area for cultural resources. Culturally Modified Trees near mouth of stream on eastern boundary. Move boundary to avoid CMT's if possible.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			

Boundary moved to avoid CMT's. It has substantial second growth in immediate area. Type B clearcut in uphill yarded and flatter portions of unit, attempting to build upon large buffered areas, lake select cut buffer, and muskeg in unit. Partial cut as corridors in steeper downhill yarded areas. Select mistletoed hemlock for cutting. Mitigation measures for this unit are: F4, F5, F8, F10, W1, W2, W4, W11, C1, V3.

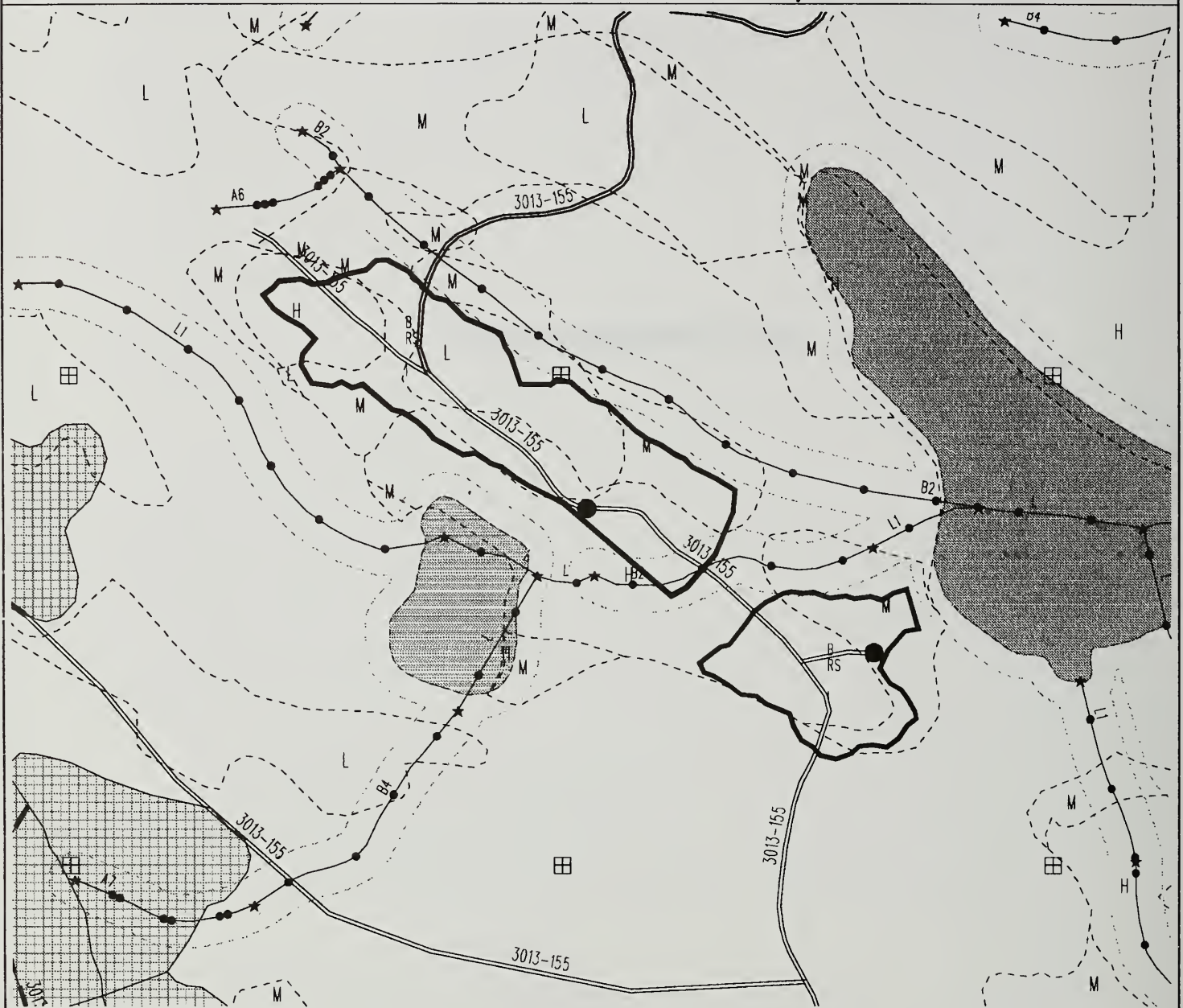
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 435

QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 435	QUARTER QUAD: C2NW	PHOTO YR/#: 1991/690-34
ACRES: 34.6	VOL.: 621 MBF	LOGGING SYSTEM: Running Skyline/Swingyarder with 70' Tower, Shovel	
LANDSCAPE ZONE: Unit is within the Angel Lake Corridor.			
Timber/Vegetation	Field Review: J. Miller, 8/16/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock and cedar with a few spruce present. Predominantly hemlock regeneration. Sparse spruce and western red cedar regeneration. Low to moderate amounts of mistletoe infection evident in canopy.</p> <p>Moderate amounts of stem decay evident in cedar. Fairly dense understory vegetation. Promote spruce regeneration through seed tree harvest and/or planting.</p>			
Logging/Transportation	Field Review: T. Wetzel/ D. Foster, 8/19/93	Office Review: M. Whitty	
<p>Shovel logging for northeast 1/2 of unit. The southeast corner of the northwest section of the unit contains a long corner with yarding distances up to 950'. A 70' tower will be required for marginal partial suspension here, as indicated by the critical profile. This area will be yarded to landing 48+40R which has guy stumps in a TTRA buffer. This area also has a 400' select harvest lake buffer recommended in the resource report. The lakes and streams in and around this unit have 3,700' of 100' buffer. Consider feasibility of road to Unit #597-124. Unit is accessed by Road #3013155.</p>			
Watershed/Fisheries	Field Review: J. Metzler/ M. Minnillo, 8/07/93	Office Review: A. Wolfson	
<p>There are two Class I lakes adjacent to the unit which require a 100' no cut buffer a 400' selective harvest buffer. There are also two Class I streams: One along the northeast boundary and one bisecting the unit; that each require a 100' buffer.</p>			
Soils/Geology	Field Review: J. Metzler, 8/07/93	Office Review: A. Wolfson	
No special concerns.			
Wildlife	Field Review: M. Minnillo, 8/07/93	Office Review: M. Hall	
<p>Low to moderate deer use in unit. Angel Lake east of unit. Geese observed at lakes east and west of unit. Common loons observed on Angel Lakes. Lakes east and west are active beaver ponds. Contiguous old-growth. Retain Level 1 structure; lake and stream buffers will help retain structure. Snags will also be left in Class I stream buffer and lake buffers/select harvest buffers. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			

Interdisciplinary Team Recommendations	
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Streams on southwest and northeast of and bisecting unit require 100' TTRA buffer. Lakes require 100' no-cut and 400' selective cut buffers (Type I). Stream on northwest boundary (Class III) requires directional falling into unit. Make this stream the northwest boundary. Type B clearcut in remainder of unit. Mitigation measures for this unit are: F5,F8,F10,W1,W2,W4,W11,V3.

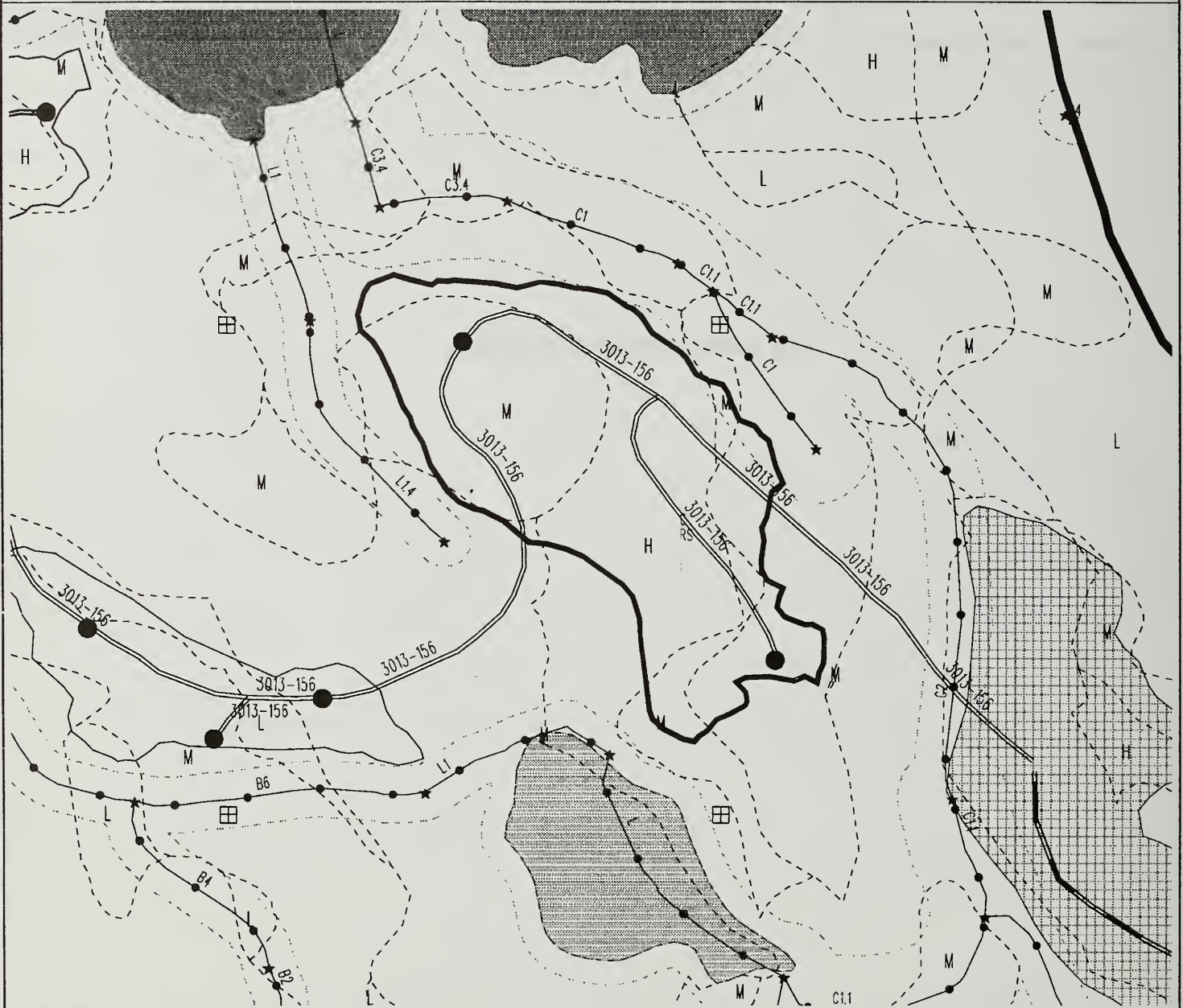
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 437

QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 437	QUARTER QUAD: C3NW	PHOTO YR/#: 1991/690-33
ACRES: 40	VOL.: 559 MBF	LOGGING SYSTEM: Running Skyline/Swingyarder, Shovel	
LANDSCAPE ZONE: Unit is within the Angel Lake Corridor.			
Timber/Vegetation	Field Review: G. Hedin, 7/3/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Very few spruce in area. Predominantly hemlock regeneration. Sparse western red cedar and spruce regeneration. Light amount of mistletoe infection evident in canopy.</p> <p>Promote spruce/cedar regeneration through planting. Harvest all mistletoe infected hemlock and cut infected regeneration.</p>			
Logging/Transportation	Field Review: M. Hoshall/ B. Wilkinson, 7/01/93	Office Review: K. Jehnke	
Unit is accessed by Road #3013156. The outside perimeter should be swing yarded. The interior portion should be shovel logged. Partial cut is feasible. A 100 foot buffer is on the NW stream and SW lake. A 200 foot stream buffer is on the NE edge.			
Watershed/Fisheries	Field Review: B. Romey, 6/26/93	Office Review: A. Wolfson	
Stream 1 needs a 100' buffer. Stream 2 needs a 100' buffer plus 100' no-programmed harvest buffer from floodplain/delta edge. Stream 3 needs a 100' buffer plus 100' no programmed harvest buffer. Lake needs a 100' buffer plus 400' selective harvest buffer.			
Soils/Geology	Field Review: M. Minnillo, 6/26/93	Office Review: A. Wolfson	
Overall dry site and low slopes. No concerns.			
Wildlife	Field Review: M. Minnillo, 6/26/93	Office Review: A. Wolfson	
North and east portion of unit is dense thermal cover with high food supply to the south and west. High use areas at the lakes north and south of unit and riparian corridor at east boundary. 100' stream buffer would adequately provide structure; Level 1 retention. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO. Visible from Angel Lakes which receive considerable recreational use.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources.</p> <p>Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			

Stream 1 northwest corner of unit needs a 100' buffer. Stream 2 at north end of unit requires 100' buffer plus 100' no-programmed harvest. Lake requires (to south) 100' no-cut buffer and 400' selective harvest buffer. During final layout consider putting road on south side of knob in unit to minimize visibility from lake. Group selection - Type I recommended for north facing slopes facing Angel Lakes, Type E clearcut for south facing slopes. Mitigation measures for this unit are: F4,F5,F8,F10,W2,W4,W6,W10,W11,V3.

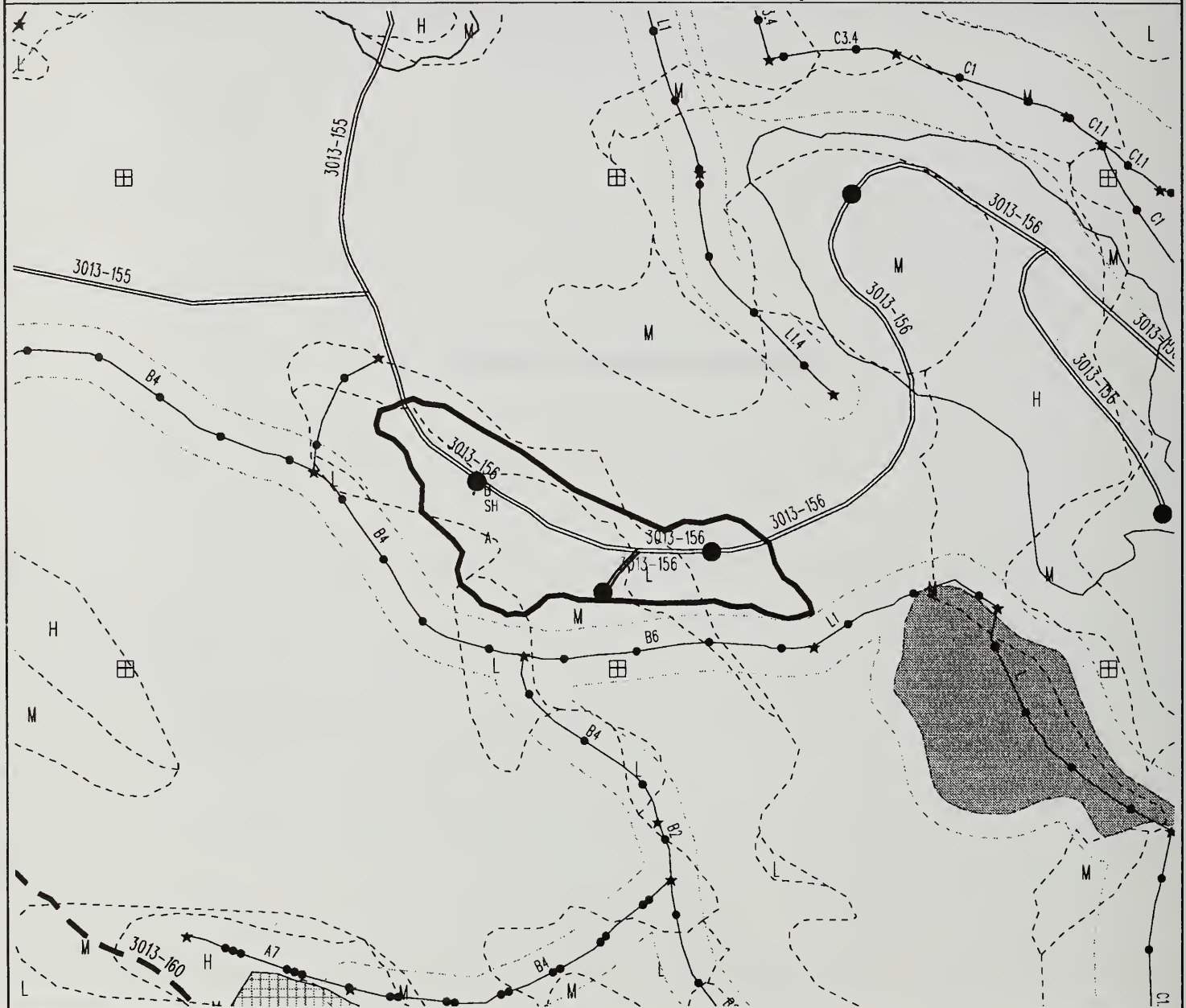
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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 438

QUAD : C2-NW



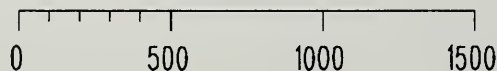
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 438	QUARTER QUAD: C2NW	PHOTO YR/ #: 1991/690-33
ACRES: 16	VOL.: 291 MBF	LOGGING SYSTEM: Running Skyline/Swingyarder/Shovel Yard	
LANDSCAPE ZONE: Unit is within Goose Creek Watershed and in the Angle Lake Corridor.			
Timber/Vegetation	Field Review: S. Karstens, 7/10/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Sparse spruce and western red cedar regeneration. Fairly dense understory vegetation including salal.			
Logging/Transportation	Field Review: T. Wetzel/ D. Foster, 8/17/93	Office Review: M. Whitty	
This unit requires 30 stations of medium construction beyond Unit 597.2-437 - 240' of muskeg crossing. 75% uphill swingyarding; 25% downhill shovel logging. Potential highlead on cable portion of unit - there are no suspension requirements. Economics are marginal due to small (13 acre) unit. Unit has approximately 2,000' of 100' buffer on south and west boundaries. Scattered pockets of blowdown in center of unit still of salvagable quality. Consider feasibility of road to Unit #597-124. Unit is accessed by Road #3013156.			
Watershed/Fisheries	Field Review: B. Romey, 7/08/93	Office Review: A. Wolfson	
100' no-cut buffer required on Streams 1 and 2 along south side of unit.			
Soils/Geology	Field Review: M. Minnillo, 7/08/93	Office Review: A. Wolfson	
Low elevation; fairly flat unit. No stability concerns except along Class I stream which will be protected by no-cut buffer. No concerns.			
Wildlife	Field Review: M. Minnillo, 7/08/93	Office Review: A. Wolfson	
Moderate deer use throughout unit. Muskeg along north boundary of unit. Maintain Level 1 structure retention in unit. Avoid disturbance of wintering trumpeter swans by avoiding all human activity within 0.5 mile of known swan wintering areas during October 15 through March 15.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Type A clearcut. 100' no-cut buffer required south of unit. Channel Type B4 above junction requires 100' no-cut plus 50' selective harvest Type I buffer. Consider feasibility of road access to Unit #597-124 to avoid 60' span bridge. Mitigation measures for this unit are: F4,F5,F8,F10,W2,W5,W10,W11.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 445

QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

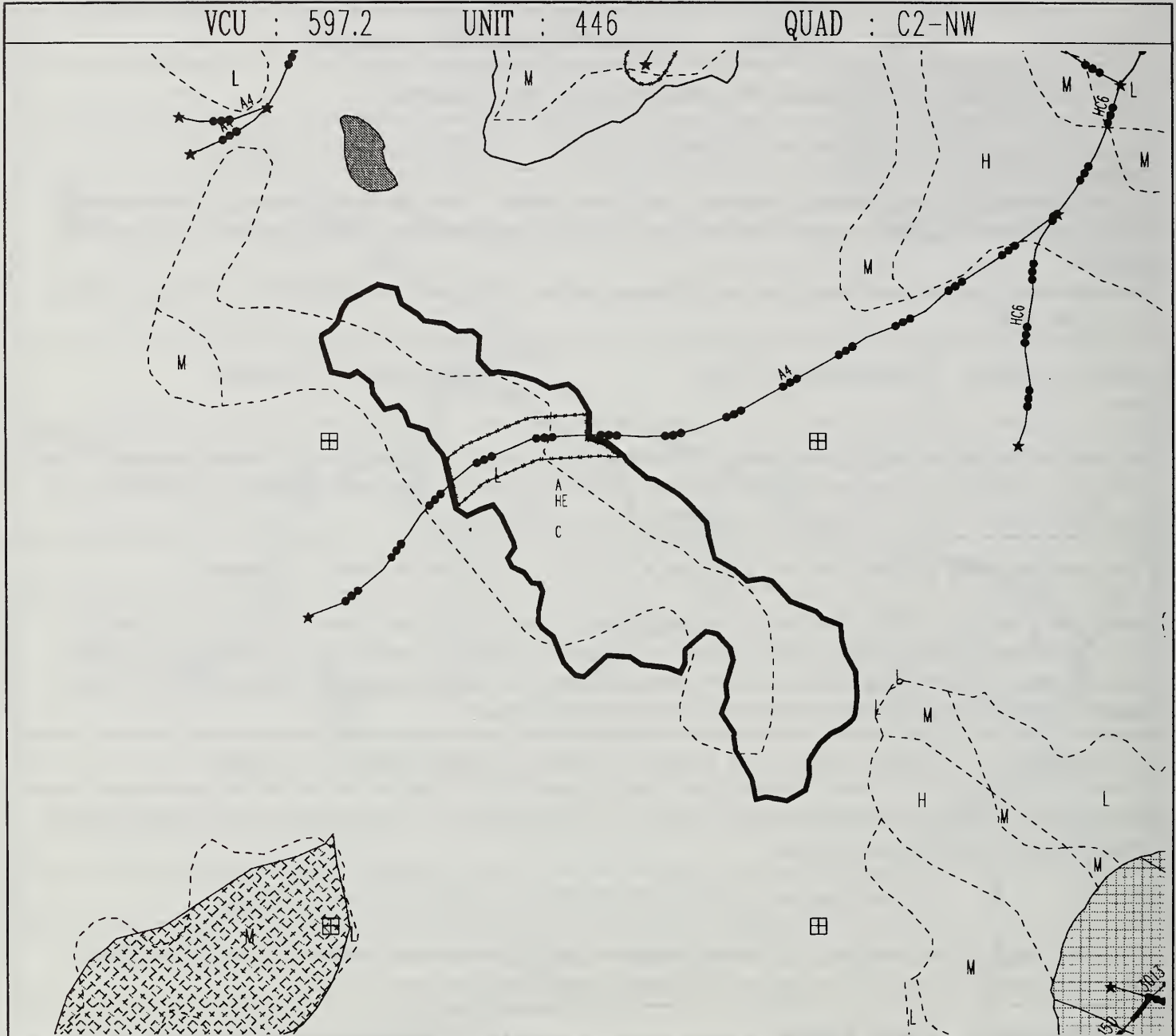
VCU #: 597	UNIT #: 445	QUARTER QUAD: C2NW	PHOTO YR/#: 1991/690-30
ACRES: 24	VOL.: 522 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Rio Beaver/Goose Creek Watershed			
Timber/Vegetation	Field Review: T. Stecher, 7/9/93	Office Review: J. Goering	
<p>Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Sparse spruce and western red cedar regeneration. Alaska yellow cedar decline evident.</p> <p>Steep relatively shallow soils, and poor soil drainage areas within unit. Rock bluffs on the higher elevations of the unit.</p>			
Logging/Transportation	Field Review: None	Office Review: K. Jehnke	
<p>Unit was not visited by logging engineers. Recommend helicopter logging due to isolated position. Yard to 597-118. Unit 597-118 is not on 1991 photos. Approximate average flight distance = 3200 feet. Average flight slope = -18%. Check size of landing prior to final layout.</p>			
Watershed/Fisheries	Field Review: B. Romey, 7/07/93	Office Review: T. Stewart	
<p>Stream 1 is Class III - O/W, directional fall away from stream from slope break. Stream 2 is Class III - O/W, directional fall away from stream from slope break. (Streams 1 and 2 are same stream, different channel types). Slope break buffers will be implemented along class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.</p>			
Soils/Geology	Field Review: M. Minnillo, 7/07/93	Office Review: T. Stewart	
<p>Steep slopes. Rock bluff through center of unit at 1,200' elevation. Planned and recommended for helicopter logging. Generally a wet site.</p>			
Wildlife	Field Review: M. Minnillo, 7/07/93	Office Review: M. Hall	
<p>Helicopter logging per soils/geology recommendation would retain some cover and provide for future structure in stand. No wildlife concerns. Maintain Level 1 structure retention.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
<p>Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.</p>			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			
<p>Type C clearcut. Directionally fall trees away from stream below unit. Mitigation measures include F1, F2, F4, F5, W1, W3.</p>			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 446

QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet

0 500 1000 1500

April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 446	QUARTER QUAD: C2NE	PHOTO YR/#: 1991/690-30
ACRES: 33	VOL.: 499.1 MBF	LOGGING SYSTEM: Helicopter	
LANDSCAPE ZONE: Unit is within Rio Beaver Watershed.			
Timber/Vegetation	Field Review: G. Hedin, 7/9/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some spruce. Regeneration predominantly hemlock but includes some cedar and spruce. Rock bluffs on the higher elevations of the unit. Steep slopes, rocky, relatively thin soils, exposed rock, and some poor soil drainage areas.			
Logging/Transportation	Field Review: none	Office Review: K. Jehnke	
Unit was not visited by logging engineers. Recommend helicopter logging due to isolated location. Yard logs to landing in 597-118. Road and landing do exist but exact size and location is unknown. Approximate average flight distance = 3800 feet. Average flight slope = -26%.			
Watershed/Fisheries	Field Review: B. Romey, 7/07/93	Office Review: A. Wolfson	
Stream 2 is a Class III with O/W flagging - split yard or full suspension, directional fall away from stream. Slope break buffers will be implemented along stream 2, adjacent areas will be treated to provide a reasonable assurance of wind firmness. Stream 1 is a Class III with G/W (no longer near unit).			
Soils/Geology	Field Review: M. Minnillo, 7/07/93	Office Review: A. Wolfson	
Slopes are > 70% throughout unit, up to 105%. Wet site with many open patches of deer cabbage bed-rock through middle of unit. Helicopter logging planned and recommended.			
Wildlife	Field Review: M. Minnillo, 7/07/93	Office Review: A. Wolfson	
Low to moderate deer use in unit. Helicopter selective logging for soils/geology concerns would leave cover and provide structure. Level 3 structure retention maintained.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Recommend Type C clearcut (maintain Level 3 structure). Directionally fall trees away from stream in unit. Mitigation measures include F1, F2, F4, F5, W1, W3.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 447

QUAD : C2-NW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

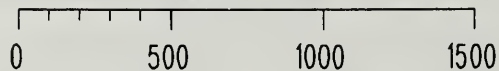
★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41

● Landings

----- Stream & Lake NoCUT Buffers

Scale in Feet



April 22, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 447	QUARTER QUAD: C2NW	PHOTO YR/#: 1991/690-30
ACRES: 7.0	VOL.: 158 MBF	LOGGING SYSTEM: Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is within Goose Creek Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 7/3/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Regeneration predominantly hemlock and includes some cedar but is lacking spruce. Light amount of mistletoe infection evident in canopy.			
Logging/Transportation	Field Review: E. Urstadt, 8/15/93	Office Review: T. Stewart	
Unit can be harvested using swingyarding with continuous road side landing. Unit is accessed by specified road construction (Rd #72-83-12). Elevations above road may be shovel logged if desired. Partial cutting is feasible.			
Watershed/Fisheries	Field Review: R. Rogers, 6/26/93	Office Review: T. Stewart	
Stream 1 flagged with 150' no-cut buffer and no selective harvest buffer; blue/white flagging along flood plain. Stream 2 flagged 100' no-cut buffer and no selective harvest buffer; blue/white flagging in stream. Slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: R. Rogers, 6/26/93	Office Review: T. Stewart	
No instability noted on slopes. Glacial till soils present, may require minimizing road cuts and cut angles to prevent soil erosion.			
Wildlife	Field Review: S. Tanguay, 6/26/93	Office Review: M. Hall	
Low wildlife use in unit. Moderate deer sign observed. This area is highly fragmented. Woodpeckers audible. Avoided muskegs both east of unit and along Class I mainstream floodplain. Implement Road Access Plan for area. Retain Level 1 structure.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Class I stream on south requires 150' no-cut buffer. Class I stream on west requires 100' no-cut buffer. Recommend Type B clear-cut. Mitigation measures for this unit are: F4, F5, F6, F8, F10, W1, W2, W4, W10			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 448

QUAD : C3-NE



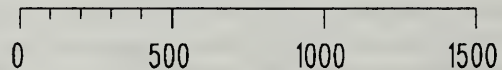
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrato
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



May 07, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

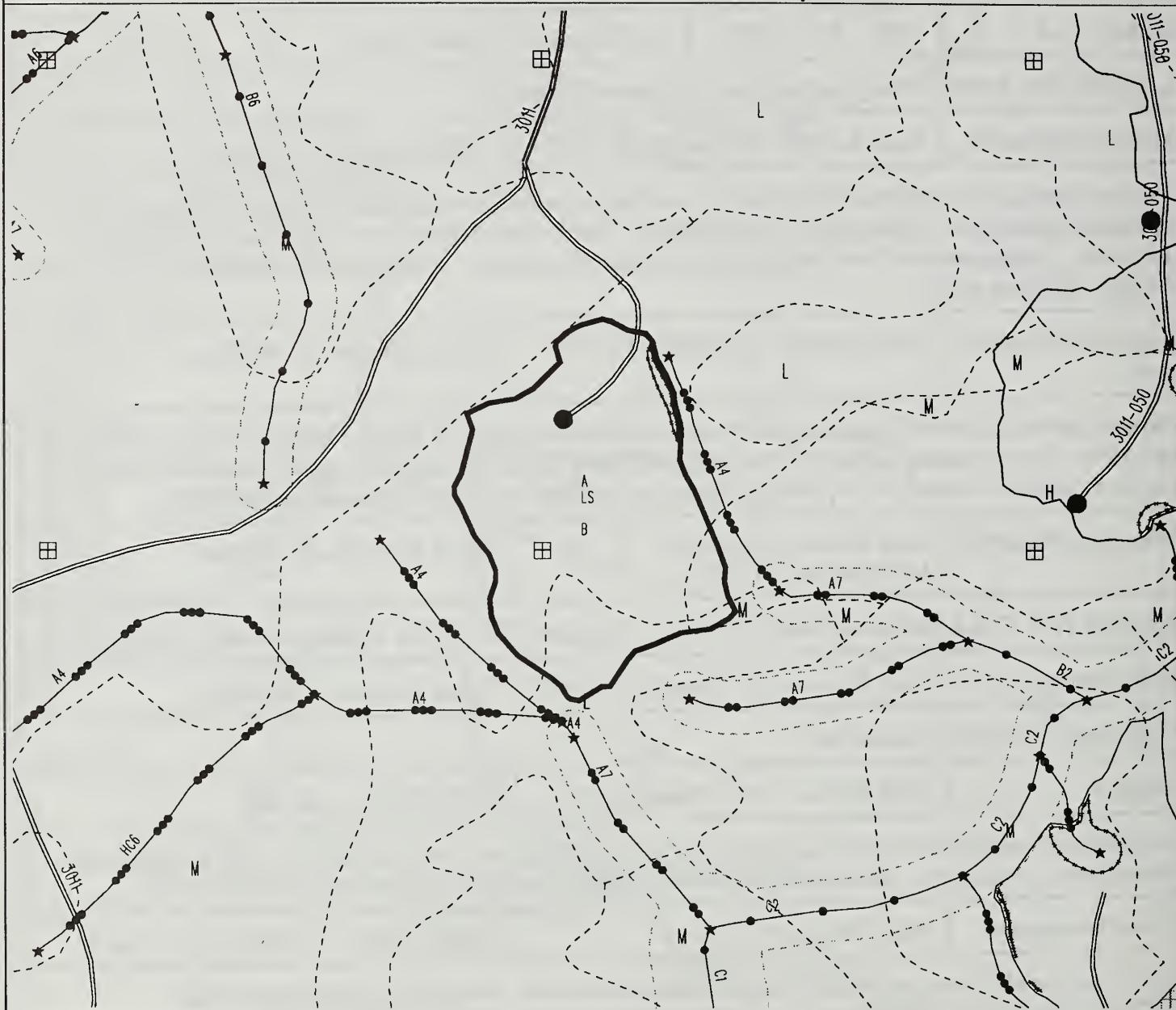
VCU #: 597	UNIT #: 448	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/990-163
ACRES: 9.3	VOL.: 218.9 MBF	LOGGING SYSTEM: Shovel	
LANDSCAPE ZONE: Unit is within the Rio Beaver Watershed			
Timber/Vegetation	Field Review: B. Hasebe, 6/17/93	Office Review: J. Goering	
Species composition predominantly hemlock with some cedar. Few spruce are present. Predominantly hemlock regeneration. Sparse spruce regeneration. Fairly dense understory vegetation including abundant salal. Light amount of mistletoe infection evident in canopy. Numerous muskegs are located around the unit. Shallow soils.			
Logging/Transportation	Field Review: E. Urstadt, 8/15/93	Office Review: A. Wolfson	
Harvest system is shovel logged to road. Unit is accessed by Rd #71-83-33.4 which has 400' of easy construction. A wet, muskeg portion in the northeast corner should be left for wildlife. Blowdown should not be a problem. Partial cut is possible, but not recommended. Unit is economically feasible.			
Watershed/Fisheries	Field Review: B. Romey/ M. Minnillo, 6/10/93	Office Review: A. Wolfson	
Required 100' TTRA buffer on Class I, Stream 1. Required 100' TTRA buffer on Class I, Stream 2.			
Soils/Geology	Field Review: M. Minnillo, 6/10/93	Office Review: A. Wolfson	
Low slopes. No stability concerns.			
Wildlife	Field Review: M. Minnillo, 6/10/93	Office Review: M. Hall	
No concerns, snag retention will be achieved in Class I and Class II stream buffers. Low wildlife signs. Retain Level 1 structure. Boundary modification on northeast unit will serve as wildlife buffer.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
100' buffers on Class I stream on north and east side. Recommend Type B clearcut. Fall trees away from wetter sites to minimize soil disturbance by shovel yarder. Wet muskeg area to east of landing was left as a wildlife leave island because of inadequate slash to use for a mat to support the shovel yarder (Type D). Mitigation measures for this unit are: F4, F5, F8, W1, W4, W10.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 457

QUAD : C3-NE



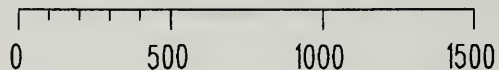
- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Valstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NaCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 457	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-126
ACRES: 25.0	VOL.: 856.6 MBF	LOGGING SYSTEM: Live Skyline/Shotgun with 100' Tower	
LANDSCAPE ZONE: Unit is within Rio Beaver Watershed.			
Timber/Vegetation	Field Review: J. Miller, 6/18/93	Office Review: J. Goering	
<p>Species composition predominantly cedar with hemlock. Little spruce is present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Windthrow damage evident in the middle of the unit due to unstable soils.</p> <p>Little to no mistletoe evident in canopy.</p>			
Logging/Transportation	Field Review: J. Estabrook/C. Giles/D. Graves, 8/15/93	Office Review: E. Urstadt	
<p>This unit will be harvested using a Live Skyline/Shotgun cable system. A 100' or larger tower is needed to attain partial suspension. Tail trees need to be rigged at 50' to achieve partial suspension. Blowdown is not a problem within the unit. A wildlife buffer was left at the north boundary adjacent to muskeg.</p>			
Watershed/Fisheries	Field Review: R. Rogers, 6/17/93	Office Review: A. Wolfson	
<p>East/northeast bounding stream flagged orange/white; slope break buffers will be implemented on Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.</p>			
Soils/Geology	Field Review: R. Rogers, 6/17/93	Office Review: A. Wolfson	
<p>Significant soil creep, jackstrawed trees, and wet soils observed - partial suspension required.</p>			
Wildlife	Field Review: J. Boyce, 6/17/93	Office Review: M. Hall	
<p>No special wildlife concerns. Low to moderate deer use in unit. Retain Level 2 structure. A buffer was left along muskeg at north end of unit.</p>			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
<p>Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.</p>			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
<p>Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.</p>			
Interdisciplinary Team Recommendations			
<p>Because of level of harvest in watershed and natural fragmentation from muskegs, recommend Type B clear-cut. Recommend partial suspension on unit. Directional fall trees away from streams buffers on boundary. No selective harvest buffers are required. Mitigation measures for this unit are: F1, F3, F4, F5, F8, W1, W4, W10.</p>			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 458

QUAD : C3-NE



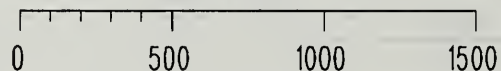
- Revised Control Lake Project Boundary
- Past-Field Unit Boundary w/ Setting Codes
- Other Past-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Past-Field Proposed Roads
- Class 3 Treatment Zone

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

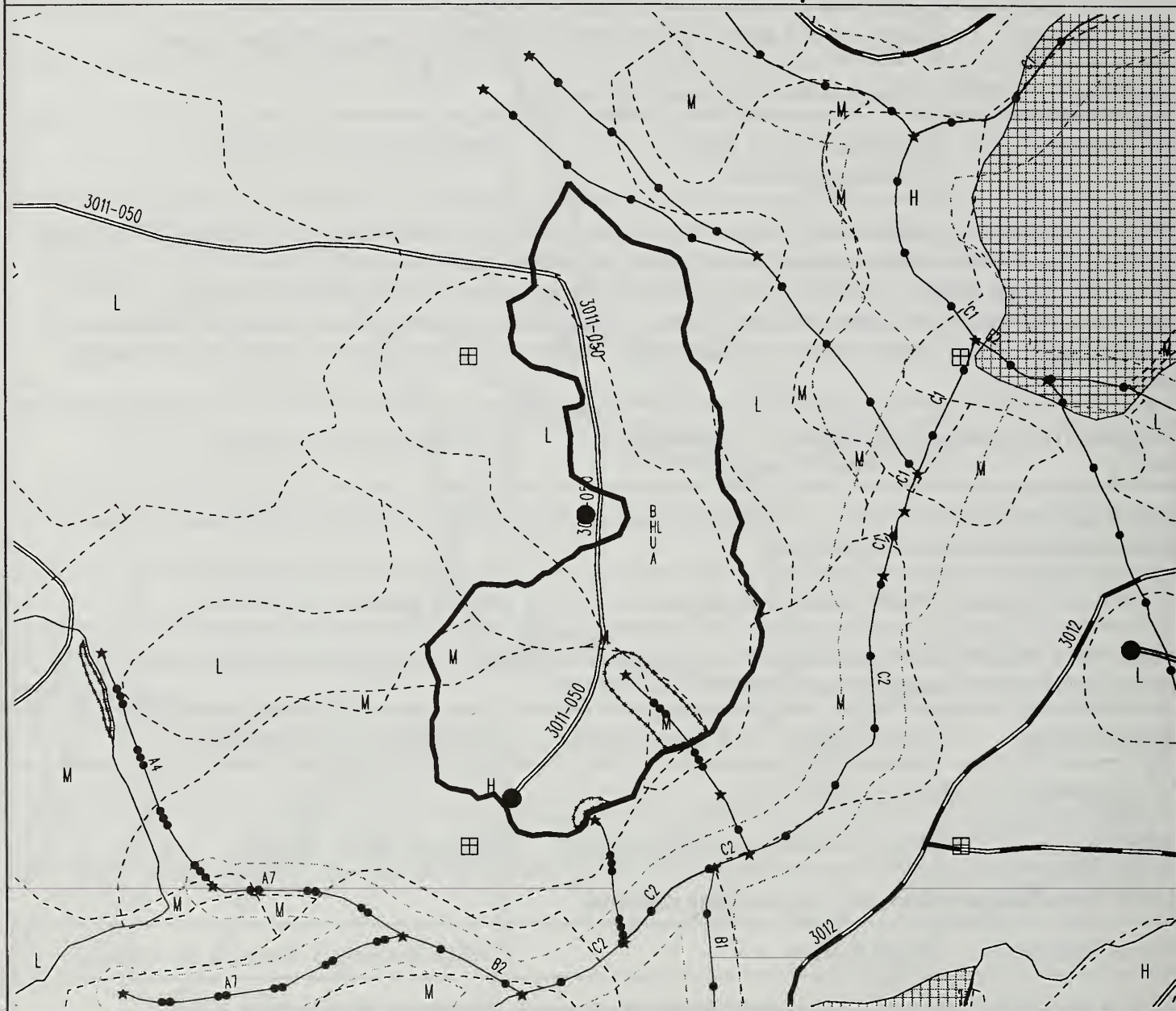
VCU #: 597	UNIT #: 458	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-126
ACRES: 30.0	VOL.: 958.2 MBF	LOGGING SYSTEM: Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is within Big Beaver Watershed.			
Timber/Vegetation	Field Review: J. Miller/ J. Goering, 6/17/93	Office Review: J. Goering	
Species composition predominantly hemlock and cedar with a few spruce present. Regeneration predominantly hemlock but includes some spruce and cedar in the west portion, mostly on nurse logs. Alaska yellow cedar decline evident - heaviest in the northwest corner of the unit with muskeg incursion. Low to moderate amounts of stem decay evident in cedar. Moderate to high amounts of mistletoe infection evident in canopy. Fairly dense understory vegetation. Many small seeps, streams, and poor soil drainage areas.			
Logging/Transportation	Field Review: J. Estabrook/ C. Giles/D. Goude, 6/19/93	Office Review: K. Jehnke	
Unit is accessed by Road #3011. Recommend Running Skyline. Shovel log the NW corner. Partial cut is not recommended due to steep slopes.			
Watershed/Fisheries	Field Review: R. Rogers, 6/16/93	Office Review: A. Wolfson	
Slope break buffers will be implemented on identified bounding Class III streams, adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: R. Rogers, 6/16/93	Office Review: A. Wolfson	
No concerns. No instability noted.			
Wildlife	Field Review: C. Confer, 6/16/93	Office Review: M. Hall	
Level 1 structure retention. No other wildlife concerns.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
Because of mistletoe infection recommend Type A clear-cut. Directional fall away from Class III buffered north and south bounding streams. No selective harvest buffers are required. Shovel yard northwest corner. Mitigation measures for this unit are: F4, F5, F8, W1, W5, W10.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 459

QUAD : C3-NE



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone

- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes

★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 459	QUARTER QUAD: C3NE	PHOTO YR/#: 1991/1090-126
ACRES: 44.0	VOL.: 734.0 MBF	LOGGING SYSTEM: Running Skyline, Shovel	
LANDSCAPE ZONE: Unit is within Rio Beaver Watershed.			
Timber/Vegetation	Field Review: T. Stecher, 6/17/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes cedar and some lodgepole. Predominantly hemlock regeneration. Lacking cedar regeneration. Fairly dense understory vegetation including salal. Low to moderate amounts of root decay evident in hemlock. Promote spruce/cedar regeneration through planting. Shelterwood/seedtree harvest to promote spruce and cedar regeneration and meet Forest martin and goshawk standards and guidelines.			
Logging/Transportation	Field Review: J. Estabrook/ C. Giles/D. Graves	Office Review: E. Urstadt	
This unit will be harvested using a combination of shovel and cable yarding. 5 landings are located in the unit. The north and west corners of the unit can be shovel logged. Stream 2, orange/white, in middle of unit will be split yarded and directional fell away from required slope break buffer. No selective harvest buffers are required. Blowdown is not evident within unit. Unit is accessed by Road #3011050.			
Watershed/Fisheries	Field Review: B. Romey, 7/11/93	Office Review: A. Wolfson	
Northern unit boundary moved to the south side of Stream 1. A slope break buffer is implemented on Stream 2; Class III stream and adjacent areas will be treated to provide a reasonable assurance of wind firmness.			
Soils/Geology	Field Review: B. Romey, 7/11/93	Office Review: A. Wolfson	
Unit is fairly flat (no soils concerns).			
Wildlife	Field Review: M. Minnillo, 7/11/93	Office Review: M. Hall	
Area south of Class III stream in unit will be modified to a diameter limit selection harvest designed to meet the Goshawk/Marten S&G's for high risk provinces and VCU's greater than 33% harvested. Light deer/bear use in unit. Woodpeckers audible. Plucking post (junco) observed along Class I stream on south side of unit (across Rio River, along Unit #597-416), raptor unknown, most likely a sharp-shinned as-plucked bird; looked like a small junco. Southern portion of unit surveyed for goshawk with no observations. Snag retention Level 1. Stream buffer will maintain corridor along stream which is heavily traveled. Light deer/bear use in unit.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Seen from Road 30 in Middleground. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			

Class I stream to southeast of unit buffered by 100'. Split yard and directional felling of trees away from the implemented stream buffer in center of unit. No selective harvest buffers required. Because of poor site quality and competing understory, recommend Type A clear-cut. Mitigation measures for this unit are: F5, F8, W1, W5, W6, W10, V3.

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CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 460

QUAD : C2-SW



- Revised Control Lake Project Boundary
- Post-Field Unit Boundary w/ Setting Codes
- Other Post-Field Unit Boundaries
- USFS Timber - Volstrata
- Eagle Tree Buffer of 330ft
- Existing & Rebuilt Roads
- F.S. Roads Under Construction
- Post-Field Proposed Roads
- Class 3 Treatment Zone
- Ahmu-Class 1 & Stream Chantypes
- Ahmu-Class 2 & Stream Chantypes
- Ahmu-Class 3 & Stream Chantypes
- Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet

0 500 1000 1500

April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 460	QUARTER QUAD: C2NW	PHOTO YR/#: 1991/1090-74
ACRES: 47.0	VOL.: 1632.0 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is within Rio Beaver Watershed.			
Timber/Vegetation	Field Review: B. Hasebe, 7/9/93	Office Review: J. Goering	
Species composition predominantly hemlock but includes some spruce and cedar. Predominantly hemlock regeneration. Sparse spruce and western red cedar regeneration. Alaska yellow cedar decline evident. Low to moderate amounts of mistletoe infection evident in canopy. Shelterwood/seedtree harvest to promote spruce and cedar regeneration and meet Forest martin and goshawk standards and guidelines.			
Logging/Transportation	Field Review: J. Doyal/ J. Herzberg/T. Hoshall, 8/25/93	Office Review: M. Whitty	
Running skyline will harvest this unit. The unit is divided by muskeg into two parts; A and B. Assure good tailtrees during harvest because most of the unit borders muskeg. A partial cut will require a helicopter due to poor tailholds. 100' buffer implemented on Class I stream west of the unit. No suspension required. No selective harvest buffers are required.			
Watershed/Fisheries	Field Review: B. Romey, 7/08/93	Office Review: A. Wolfson	
120' TTRA buffer required on Stream 1 along west side of unit.			
Soils/Geology	Field Review: M. Minnillo, 7/08/93	Office Review: A. Wolfson	
Slopes are moderate. No signs of instability. Generally a dry site.			
Wildlife	Field Review: M. Minnillo, 7/08/93	Office Review: R. Fairbanks	
Western setting in unit will be modified to a diameter limit selection harvest designed to meet the Goshawk/Marten S&G's for high risk provinces and VCU's greater than 33% harvested. Dense thermal cover site, high forage in neighboring vegetation. Recommend leaving trees along muskeg in center of unit to maintain integrity of muskegs/scrub corridor. Maintain Level 2 structure vegetation. Surveyed for goshawks - no detections.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit is not visible from any priority travel routes or use areas. Maximum Modification VQO.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
100' TTRA buffer required on stream along west side of unit. No selective harvest buffers are required. Type A clear-cut. Mitigation measures for this unit are: F4,F5,F8,F10,W1,W5,W6,W10.			

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU : 597.2

UNIT : 461

QUAD : C2-SW



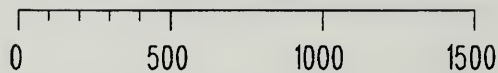
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★ Channel Type Change

- Lakes and Ponds
- Second Growth Units
- MMI 4
- McGilvery > 41
- Landings
- Stream & Lake NoCUT Buffers

Scale in Feet



April 21, 1998

CONTROL LAKE PROJECT HARVEST UNIT DESIGN CARD

VCU #: 597	UNIT #: 461	QUARTER QUAD: C2SW	PHOTO YR/#: 1991/690-28
ACRES: 32.0	VOL.: 726.8 MBF	LOGGING SYSTEM: Running Skyline	
LANDSCAPE ZONE: Unit is in Goose Creek Watershed.			
Timber/Vegetation	Field Review: G. Hedin, 7/7/93	Office Review: J. Goering	
Species composition predominantly cedar with hemlock Little spruce is present. Regeneration predominantly hemlock with a few spruce but is lacking cedar. Some thin soils. Promote spruce/cedar regeneration through planting.			
Logging/Transportation	Field Review: E. Urstadt/J. Graves	Office Review: E. Urstadt	
This unit will be harvested with a shotgun or Running Skyline system. This unit is accessed by temporary road #72-82-14. Partial suspension can be achieved. Partial cut is possible. Blowdown is not evident within the unit.			
Watershed/Fisheries	Field Review: B. Romey, 7/07/93	Office Review: T. Stewart	
No streams either near or in unit.			
Soils/Geology	Field Review: M. Minnillo, 7/07/93	Office Review: T. Stewart	
Moderate slopes, dry site, no concerns.			
Wildlife	Field Review: M. Minnillo, 7/07/93	Office Review: M. Hall	
Small lake east of unit. Maintain Level 2 structure retention due to unit affecting small patch within naturally fragmented matrix.			
Visual/Recreation	Field Review:	Office Review: S. Bedross, M. Greenig	
Unit not seen from any priority travel route or use area.			
Cultural/Lands	Field Review:	Office Review: T.W. Greiser, M. Greenig	
Cultural - Unit outside of high probability areas for cultural resources. Lands - No state/private or encumbered lands occur adjacent to unit.			
Interdisciplinary Team Recommendations			
No streams or buffers in unit. No selective harvest buffers are required. Western unit boundary brought south to exclude non - CFL. Type B clearcut recommended to maintain Level 2 structure. Mitigation measures for this unit are: F5, F8, W1, W4, S10.			

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Appendix E

Revised Road Cards

Appendix E

Revised Road Cards

Appendix E Definitions

Maintenance Level and Traffic Service Level

Maintenance Level 1 (Traffic Service Level D) - Roads are closed by bridge removal or organic encroachment and are monitored for resource protection. Basic custodial maintenance is performed to perpetuate the road and to facilitate future management activities.

Maintenance Level 2 (Traffic Service Level C) - Roads are maintained for high-clearance vehicles and monitored for resource protection. Traffic is normally minor, usually consisting of ongoing silvicultural and incidental recreational uses.

Maintenance Level 3 (Traffic Service Level B) - Roads are maintained for travel by a prudent driver in a standard passenger vehicle and are subject to the provisions of the Highway Safety Act. Road use is by administrative and passenger vehicles, as well as logging trucks.

Closure Device

Barrier - The types of barriers used for closing roads can range from bridge removal to organic encroachment. The roadbed is commonly blocked to normal vehicular traffic through the removal of drainage structures and/or pulling rock from the roadbed for an length of approximately 100 feet near the beginning of the road.

Gate - A gate is a type of barrier where access restrictions are required to mitigate impacts to wildlife, subsistence, or recreational resources, while intermittent access to the road is necessary for administrative purposes or other permitted uses.

Management Strategy

Encourage - Motor vehicle use is encouraged by appropriate signing, public notification, and active maintenance of the road prism.

Accept - Motor vehicle use is allowed but not encouraged, while the road is maintained for administrative access.

Discourage - Motor vehicle use is discouraged by allowing alder growth at road entrance, nonremoval of blowdown, or road prism deterioration within acceptable environmental limits (depending on designated maintenance level). To discourage use, the road may also be signed as "Not Maintained for Motor Vehicle Traffic".

Eliminate - Motor vehicle use is eliminated by physically blocking the road. Where prescribed for long-term intermittent roads, this strategy is achieved by placement of impassable barricades at road entrances. On short-term roads, removal of drainage structures effectively blocks vehicle traffic.

Prohibit - Motor vehicle use is prohibited by a road order (CFR closure). Implementation of this strategy on remote road systems may require the installation of gates, in addition to public notification and appropriate signing.

Prohibit Seasonally - Road is closed to motor vehicle use at times during the normal operating year. For all alternatives, seasonal prohibitions will be used as necessary to mitigate impacts to wildlife and subsistence resources (e.g., closure during either-sex deer hunting season). Administrative and permitted use of the roads will continue during closure periods, but only for specific permitted uses. Seasonal closures may be used in combination with cooperative efforts with fish and game protective agencies.

Map Number	Total Length	Length Closed	Traffic Service Level	Maintenance Level	Closure Device	Closure Reason	Management Strategy
2000-000	86.5	0.0	B	3	N / A	N / A	Encourage
2000-300	7.2	7.2	C, D	2	Barrier	Wildlife	Eliminate
2000-400	1.8	1.8	D	1	Barrier	Economic	Eliminate
2000-430	1.7	1.7	D	1	Barrier	Economic	Eliminate
2000-440	1.9	1.9	D	1	Barrier	Economic	Eliminate
2000-441	0.4	0.4	D	1	Barrier	Economic	Eliminate
2030-000	2.5	2.5	D	1	Barrier	Economic	Accept
2030-000	5.8	0.0	D	1	Barrier	Economic	Eliminate
2030-100	5.4	0.0	C	2	N / A	N / A	Encourage
2030-110	0.8	0.8	D	1	Barrier	Economic	Eliminate
2030-115	0.3	0.3	D	1	Barrier	Economic	Eliminate
2030-116	0.5	0.5	D	1	Barrier	Economic	Accept
2030-120	1.0	1.0	D	1	Barrier	Economic	Accept
2030-120	4.2	0.0	D	1	Barrier	Economic	Eliminate
2030-125	0.9	0.9	D	1	Barrier	Economic	Eliminate
2030-200	0.8	0.8	D	1	Barrier	Economic	Eliminate
2030-205	0.9	0.9	D	1	Barrier	Economic	Eliminate
2030-700	1.8	1.8	D	1	Barrier	Economic	Accept
2030-700	3.7	3.7	C	2	N / A	N / A	Encourage
2030-700	1.4	1.4	D	1	Barrier	Wildlife / Econ	Eliminate
2050-000	4.9	4.9	C, D	2	Barrier	Soils / Econ	Eliminate
2050-000	22.7	0.0	C	2	N / A	N / A	Encourage
2051-000	5.4	5.4	D	2	Barrier	Subsistence	Eliminate
2051-000	6.1	0.0	C	2	N / A	N / A	Encourage
2051-050	1.6	1.6	D	1	Barrier	Wildlife / Econ	Eliminate
2051-055	0.5	0.5	D	1	Barrier	Wildlife / Econ	Eliminate
2051-060	1.3	1.3	D	1	Barrier	Wildlife / Econ	Eliminate
2051-100	2.5	2.5	D	1	Barrier	Wildlife / Econ	Eliminate
2051-105	1.3	1.3	D	1, 2	Barrier	Subsistence	Eliminate
2051-110	1.1	1.1	D	1	Barrier	Wildlife / Econ	Eliminate

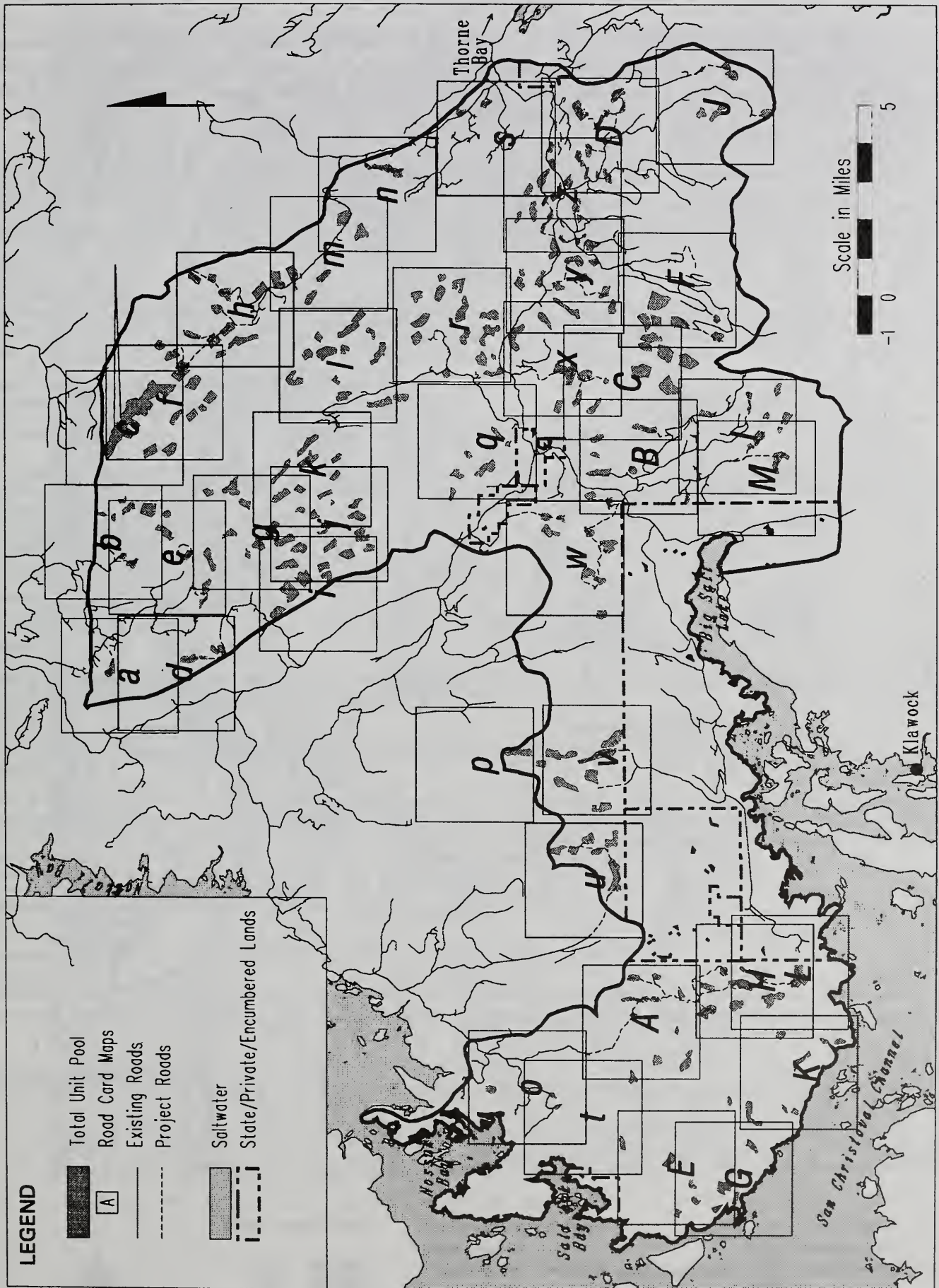
Map Number	Total Length	Length Closed	Traffic Service Level	Maintenance Level	Closure Device	Closure Reason	Management Strategy
2051-120	0.2	0.2	C	1, 2	Barrier	Subsistence	Eliminate
2051-120	0.3	0.3	C	1, 2	Barrier	Subsistence	Eliminate
2051-120	1.1	1.1	D	1	Barrier	Wildlife / Econ	Eliminate
2051-200	0.4	0.4	D	2	Barrier	Subsistence	Eliminate
2051-300	1.5	1.5	D	1	Barrier	Subsistence	Eliminate
2051-400	1.9	1.9	D	1	Barrier	Subsistence	Eliminate
2051-410	0.4	0.4	D	1	Barrier	Subsistence	Eliminate
2051-420	0.4	0.4	D	1	Barrier	Subsistence	Eliminate
2051-430	0.5	0.5	D	1	Barrier	Subsistence	Eliminate
2052-000	2.0	2.0	C, D	2	Barrier	Economic	Eliminate
2052-000	3.8	0.0	C	2	N / A	N / A	Encourage
2052-010	1.8	1.8	D	1	Barrier	Economic	Eliminate
2052-030	0.3	0.3	D	1	Barrier	Economic	Eliminate
2052-040	0.6	0.6	D	1	Barrier	Economic	Eliminate
2052-050	0.4	0.4	D	1	Barrier	Economic	Eliminate
2052-051	0.5	0.5	D	1	Barrier	Economic	Eliminate
3000-000	65.2	0.0	B	3	N / A	N / A	Encourage
3000-020	0.7	0.7	D	1	Barrier	Economic	Eliminate
3005-000	7.9	7.9	D	1	Barrier	OG Reserve	Prohibit
3005-050	0.3	0.3	D	1	Barrier	OG Reserve	Prohibit
3005-200	1.7	1.7	D	1	Barrier	OG Reserve	Prohibit
3005-400	1.0	1.0	D	1	Barrier	OG Reserve	Prohibit
3010-000	2.2	2.2	C, D	1, 2	Barrier	Economic	Eliminate
3010-000	0.5	0.5	D	1	Barrier	Economic	Eliminate
3010-100	1.7	1.7	D	1	Barrier	Economic	Eliminate
3010-110	0.8	0.8	D	1	Barrier	Economic	Eliminate
3010-130	0.7	0.7	C, D	1, 2	Barrier	Economic	Eliminate
3011-000	2.8	2.8	C, D	2	Barrier	Economic	Eliminate
3012-000	7.5	5.0	D	1	Barrier	Economic	Eliminate
3012-100	2.0	1.0	D	1	Barrier	Economic	Eliminate

Map Number	Total Length	Length Closed	Traffic Service Level	Maintenance Level	Closure Device	Closure Reason	Management Strategy
3012-120	0.4	0.4	D	1	Barrier	Economic	Eliminate
3012-140	1.5	1.5	D	1	Barrier	Economic	Eliminate
3012-145	0.9	0.9	D	1	Barrier	Economic	Eliminate
3012-180	2.1	1.1	D	1	Barrier	Economic	Eliminate
3012-200	0.8	0.8	D	1	Barrier	Economic	Eliminate
3012-210	1.2	1.2	D	1	Barrier	Economic	Eliminate
3012-280	1.6	1.6	D	1	Barrier	Economic	Eliminate
3012-300	1.6	1.6	D	1	Barrier	Economic	Eliminate
3012-600	1.3	1.3	D	1	Barrier	Economic	Eliminate
3012-Spurs	4.0	4.0	C, D	2	Barrier	Economic	Eliminate
3013-000	4.2	0.0	C	2	N / A	N / A	Encourage
3013-100	2.6	2.6	D	1	Barrier	Economic	Eliminate
3013-140	1.0	1.0	D	1	Barrier	Economic	Discourage
3013-150	6.1	0.0	C	2	N / A	N / A	Encourage
3013-154	0.7	0.0	D	1	Barrier	Economic	Eliminate
3013-155	3.3	3.3	C, D	1, 2	Barrier	Economic	Eliminate
3013-156	1.6	1.6	C, D	1, 2	Barrier	Economic	Eliminate
3013-160	0.7	0.7	D	1	Barrier	Economic	Eliminate
3013-200	3.0	3.0	D	1	Barrier	Economic	Eliminate
3013-220	1.2	1.2	D	1	Barrier	Economic	Eliminate
3015-000	12.9	4.1	C	2	N / A	N / A	Encourage
3016-000	1.6	1.6	D	1	Gate	Wildlife	Prohibit
3016-000	6.3	6.3	D	1	Barrier	Wildlife	Eliminate
3016-010	2.0	2.0	D	1	Barrier	Wildlife	Eliminate
3016-015	0.5	0.5	D	1	Barrier	Wildlife	Eliminate
3016-017	0.5	0.5	D	1	Barrier	Wildlife	Eliminate
3016-100	0.1	0.1	D	1	Barrier	Wildlife	Eliminate
3016-300	0.4	0.4	D	1	Barrier	Wildlife	Eliminate
3016-350	0.7	0.7	D	1	Barrier	Wildlife	Eliminate
3016-400	2.0	2.0	D	1	Gate	Wildlife	Prohibit

Map Number	Total Length	Length Closed	Traffic Service Level	Maintenance Level	Closure Device	Closure Reason	Management Strategy
3016-400	1.4	1.4	D	1	Barrier	Wildlife	Eliminate
3016-500	0.6	0.6	D	1	Gate	Wildlife	Prohibit
3016-600	1.5	1.5	D	1	Gate	Wildlife	Prohibit
3035-000	8.5	0.0	C	2	N / A	N / A	Encourage
3035-190	1.7	1.7	D	1	Barrier	Economic	Eliminate
3035-191	1.0	1.0	C, D	1, 2	Barrier	Economic	Eliminate
3035-191	1.0	1.0	D	1	Barrier	Economic	Eliminate
3035-194	0.4	0.4	D	1	Barrier	Economic	Eliminate
3035-196	1.3	1.3	C, D	1, 2	Barrier	Economic	Eliminate
3035-196	1.3	1.3	C, D	1, 2	Barrier	Economic	Eliminate
3035-200	2.3	1.8	D	1	Barrier	Economic	Eliminate
3035-210	0.4	0.4	D	1	Barrier	Economic	Eliminate
3035-212	0.4	0.4	D	1	Barrier	Economic	Eliminate
3035-240	1.3	1.3	D	1	Barrier	Economic	Eliminate
3035-245	1.0	1.0	D	1	Barrier	Economic	Eliminate
3035-250	0.4	0.4	D	1	Barrier	Economic	Eliminate
3035-350	1.5	1.5	D	1	Barrier	Economic	Eliminate
3035-355	0.4	0.4	D	1	Barrier	Economic	Eliminate
3035-400	2.1	2.1	D	1	Barrier	Economic	Eliminate

* Shaded areas are existing roads.

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Control Lake Project Area Draft Road Card 2000 - w

Mapscale 1:31680 (2 inch to Mile)



- | | | | | | |
|--|----------------|--|---------------------|--|----------------|
| | Class 1 Stream | | Salt Water | | Existing Roads |
| | Class 2 Stream | | Fresh Water Lakes | | Proposed Roads |
| | Class 3 Stream | | High Value Wetlands | | Selected Road |
| | | | Other Wetlands | | |

Road Number Miles

2000-300	2.73
2000-310	1.24
2000-330	1.88
2000-440	1.35

7.20



Road Data Card

Road Number: 71-85-36	ROD Road Number: 2000	M.P. :	To M.P. :
	Actual Length (miles): 7.20	New or Reconstruct:	New
Unit(s) Accessed: 595-411, -434, -412, -406	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: C, L	Traffic Service Level: C, D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural Activities
Maintain Level: 2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): P		Erosion Control: Water Bar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): The main road (2000-300) will access several present and future units that have good quality timber. The bridge location east of 595-406 is the best stream crossing and serves to control the road location. This road has one switchback, crosses two V-notches, and requires 5 - 48" culverts and 1 bridge. This road has 3 spur roads originating from it.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (1 - Class I 0 - Class II 0 - Class III): Class I stream crossing requires a construction timing window of July 18 to August 15. Segments to Units 574-405 and 595-406 cross stream with a floodplain which requires placement of culverts on each side of stream to pass flood flows.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.

as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.

as located:

RECREATION/VISUALS as planned: Units 595-405 , -405, -406, -411, -412, and j-434 are within "waters around Craig and Klawock" viewshed. Maximum Modification VQO. Middleground Distance Zone.

as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.

as located:

SOILS / WATERSHED as planned: Oversteepened slopes may require full bench construction and end haul of waste (BMP 14.7). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8). During bridge installation, erodible material will not be deposited in live streams and sediment laden water pumped away from foundation excavation will be pumped to settling areas identified during final design (BMP 14.17).

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Maintain access for future silvicultural activities.

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.

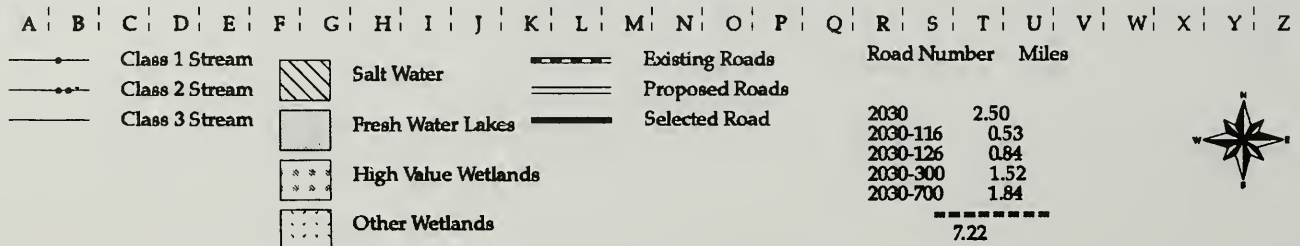
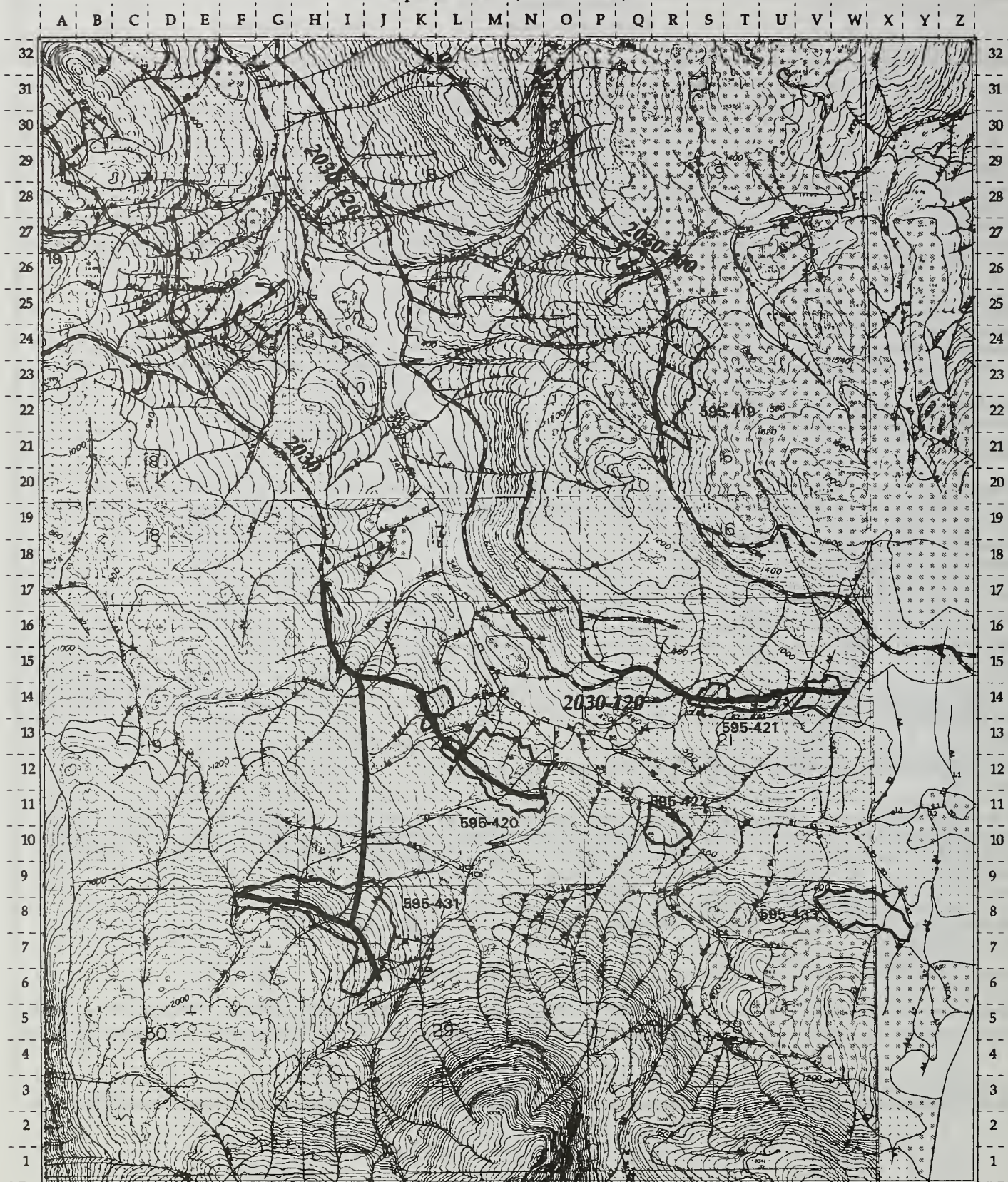
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2030 - I

Mapscale 1:31680 (2 inch to Mile)



Road Data Card

Road Number: 72-82

ROD Road Number: 2030-1

M.P.:

To M.P.:

Actual Length (miles): 7.22

New or Reconstruct:

New

Unit(s) Accessed: 595-421

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: L

Traffic Service Level: D

Highway Safety Act Number: No

Design Vehicle: LT

Critical Vehicle: LB

Intended Purpose and Use: Silvicultural treatment

Maintain Level: 1

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Accept

Erosion Control: Water Bar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy road building.

Planned vs Implemented (describe changes and rationale):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 - Class I 1 - Class II 0 - Class III): Crosses a Class II stream. No timing restrictions are necessary but culverts will be designed to allow fish passage during normal and low flows, and to minimize downstream scour (BMP 14.17).

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses three timber harvest units
as located:

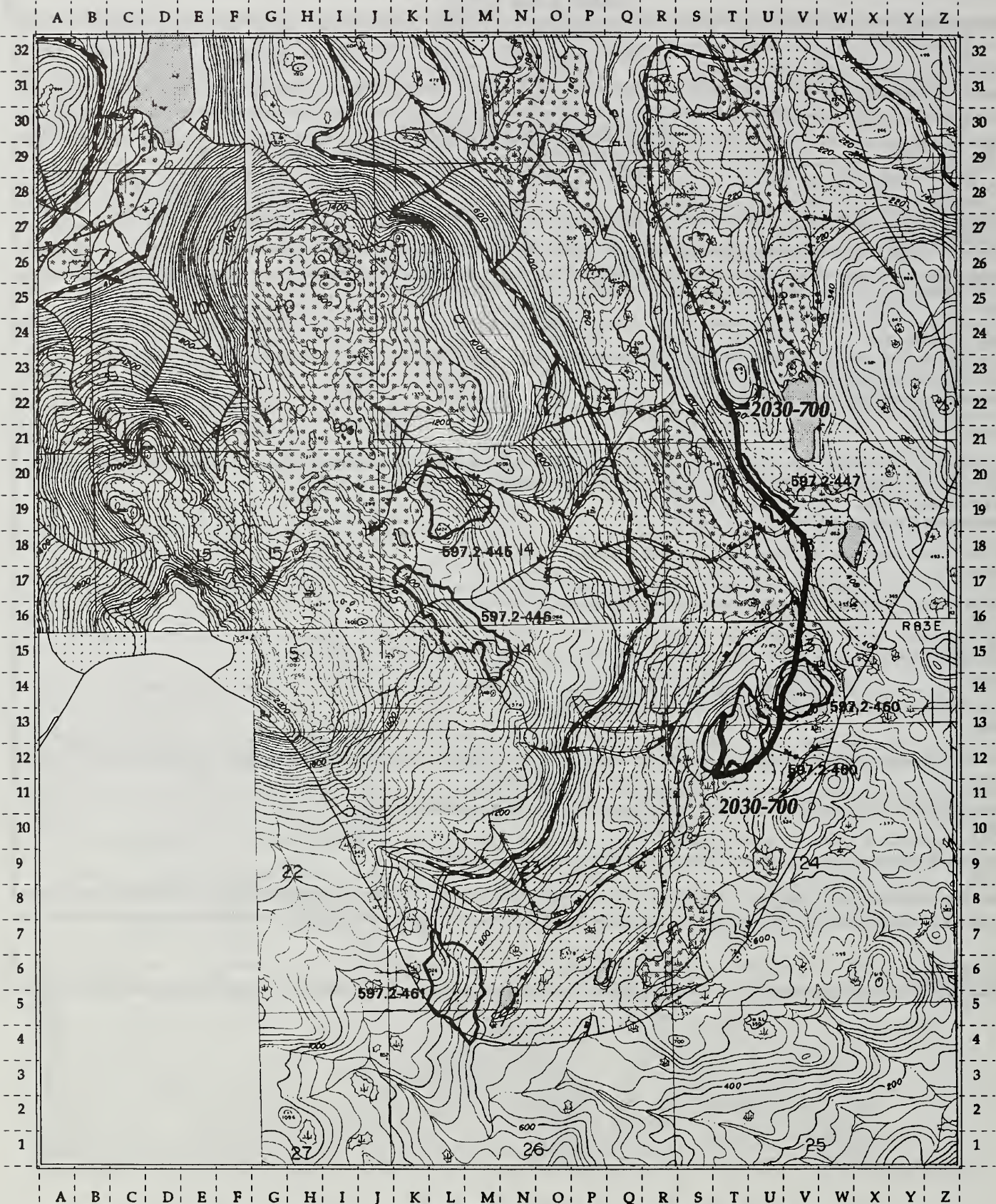
WILDLIFE as planned: Road does not approach within 1/2 mile of known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2030 - J

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
—••— Class 2 Stream
— Class 3 Stream

Salt Water
 Fresh Water Lakes
 High Value Wetlands
 Other Wetlands

— Existing Roads
— Proposed Roads
— Selected Road

Road Number Miles

2030	2.50
2030-116	0.53
2030-126	0.84
2030-300	1.52
2030-700	1.84

7.22



Road Data Card

Road Number: 72-83	ROD Road Number: 2030-J	M.P.:	To M.P.:
	Actual Length (miles): 7.22	New or Reconstruct:	Now
Unit(s) Accessed: 595-447, 460	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Accept		Erosion Control: Water Bar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy road building. No creek or muskeg crossings.
Planned vs Implemented (describe changes and rationale):
Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (0 - Class I 0 - Class II 0 - Class III):
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses three timber harvest units
as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of known bald eagle nest sites.
as located:

Ranger's Signature

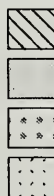
Date

Control Lake Project Area Draft Road Card 2030 - B

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
—••— Class 2 Stream
— Class 3 Stream



Salt Water
Fresh Water Lakes
High Value Wetlands
Other Wetlands

— Existing Roads
— Proposed Roads
— Selected Road

Road Number Miles

2030	2.50
2030-116	0.53
2030-126	0.84
2030-300	1.52
2030-700	1.84

7.22



Road Data Card

Road Number: 71-82-31	ROD Road Number: 2030-116	M.P. :	To M.P. :
	Actual Length (miles): .53	New or Reconstruct:	N
Unit(s) Accessed: 595-414	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Accept		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Construction: 90% Easy, 10% Medium, 0% Difficult; # of > 48" Culverts: 0; # of bridges: 0; Ft. of Cross Slopes > 55%: 0'; # of Switchbacks: 0; Ft. of critical grades: 0'. Units accessed; 1 units; # of Quarry Sites: 0; Ft. of Muskeg Crossing: 0.
Planned vs Implemented (describe changes and rationale):
Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 - Class I 0 - Class II 0 - Class III):
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: Oversteepened slopes require full bench construction and end haul of waste. All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses three timber harvest units.
as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2050 - u

Mapscale 1:31680 (2 inch to Mile)



Class 1 Stream
Class 2 Stream
Class 3 Stream

Salt Water
Fresh Water Lakes
High Value Wetlands
Other Wetlands

Existing Roads
Proposed Roads
Selected Road

Road Number Miles

2050 3.70
2050-900 0.41
4.11



Road Data Card

Road Number: 71-80-30

ROD Road Number: 2050

M.P. : 0

To M.P. : 4.92

Actual Length (miles): 4.92

New or Reconstruct:

New

Unit(s) Accessed: 594-420, -419, -412, -413, -411

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: C, L

Traffic Service Level: C, D

Highway Safety Act Number: No

Design Vehicle: LT

Critical Vehicle: LB

Intended Purpose and Use: Silvicultural Activities

Maintain Level: 2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): P

Erosion Control: Water Bar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): The bridge location is the important feature of this road. The field crew believes that the flagged location is the best location. Spur 2051100 requires a 72" culvert. Spur 2051200 accesses a large helicopter landing for Unit 594-419

Planned vs Implemented (describe changes and rationale):

Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (1 - Class I 0 - Class II 0 - Class III): Class I stream crossing requires a construction timing window of July 18 to August 15. Stream crossed by the road drains directly to a Class I stream, consequently, a similar fish timing window of July 18 to August 15 is necessary.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a Priority Travel Route/Use Area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: Oversteepened slopes may require full bench construction and end haul of waste (BMP 14.7). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8). During bridge installation, erodible material will not be deposited in live streams and sediment laden water pumped away from foundation excavation will be pumped to settling areas identified during final design (BMP 14.17).

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Maintain access for future silvicultural activities.
as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest site.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - A

Mapscale 1:31680 (2 inch to Mile)



—●— Class 1 Stream
 —●●— Class 2 Stream
 — Class 3 Stream



Salt Water
 Fresh Water Lakes
 High Value Wetlands
 Other Wetlands

— Existing Roads
 — Proposed Roads
 — Selected Road

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

 11.24



Road Data Card

Road Number:	ROD Road Number: 2051	M.P. :	To M.P. :
	Actual Length (miles): 5.0	New or Reconstruct:	N
Unit(s) Accessed: 593-417, 402, 409, 410	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: C,L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: 2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 26400', Construction: 70% Easy, 30% Medium, 0% Difficult, # of > 48" Culverts: 6; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossing: 1300'; # of "V" notches: 5; Units accessed: 4 units; # of quarry Sites: 5; # of Switchbacks: 0; Ft. if Critical Grades: 0'.
Planned vs Implemented (describe changes and rational):
Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (1 -Class I 1 - Class II 5 - Class III): Class I stream crossings require a construction timing window of July 18 to August 15. Road crosses class II streams. No timing restrictions are necessary but culverts will be designed to allow fish passage during normal and low flows, and to minimize downstream scour.
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

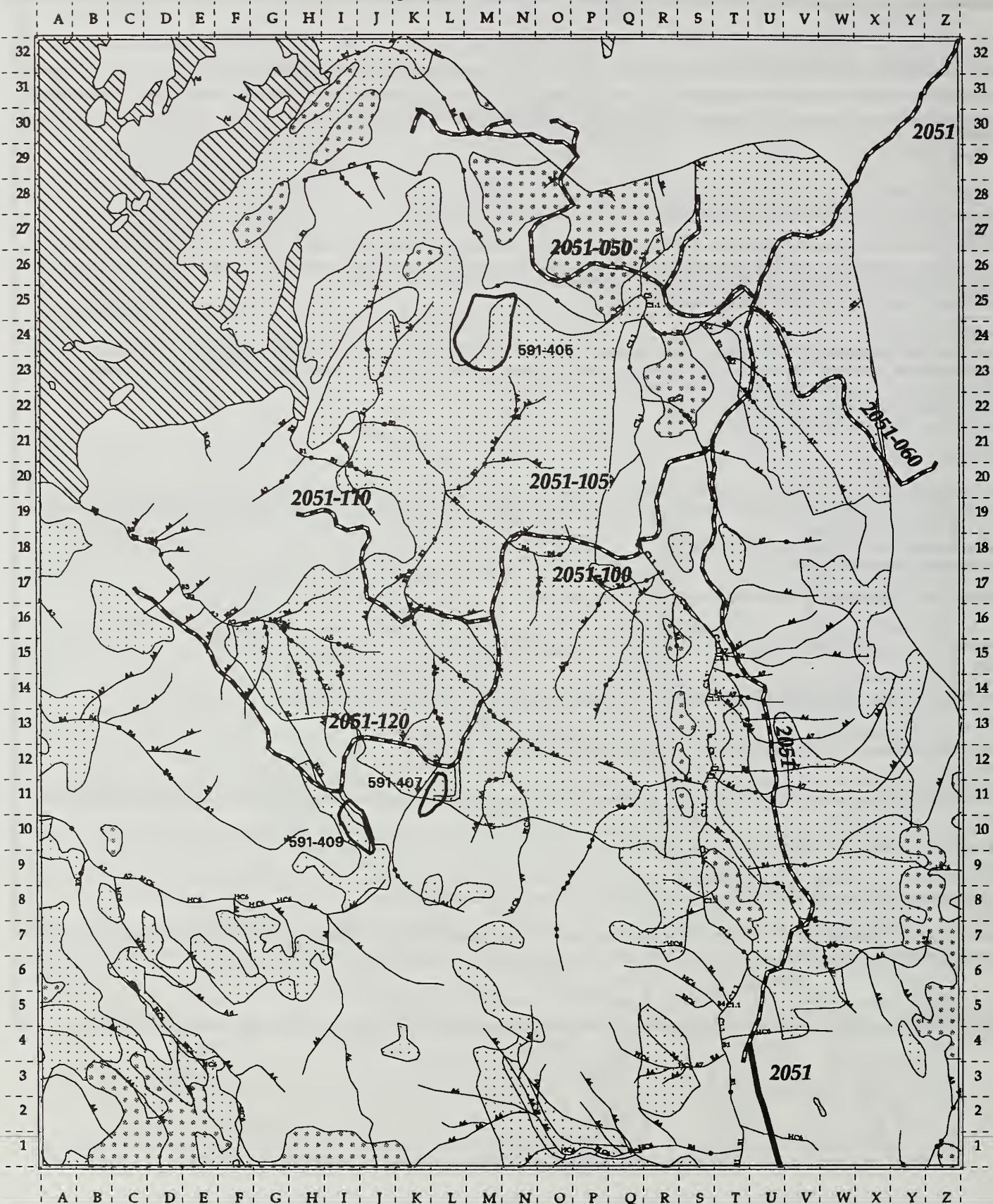
TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature	Date

Control Lake Project Area Draft Road Card 2051 - o

Mapscale 1:31680 (2 inch to Mile)



- | | | |
|---------------------|---------------------|--------------------|
| —●— Class 1 Stream | Salt Water | —+— Existing Roads |
| —●●— Class 2 Stream | Fresh Water Lakes | —+— Proposed Roads |
| — Class 3 Stream | High Value Wetlands | —+— Selected Road |
| | Other Wetlands | |

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24



Road Data Card

Road Number: 69-81-16.1	ROD Road Number: 2051-105	M.P. :	To M.P. :
	Actual Length (miles): 1.29	New or Reconstruct:	New
Unit(s) Accessed: 591-407	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: Local	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: Log truck	Critical Vehicle: Lowboy	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1,2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction. Spur road 2051-105A is old road 69-81-16.2. It is 1100 ft. long and included in the actual length column above.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): Class I crossing requires timing July 18-August 15. Road crosses floodplain channel.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: Grikes, dolines and karst present in unit but poorly developed. No caves observed. Low vulnerability karst present.
as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/Use Area.
as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.
as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils following road construction activities. (BMP 14.8)
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design for running skyline
as located:

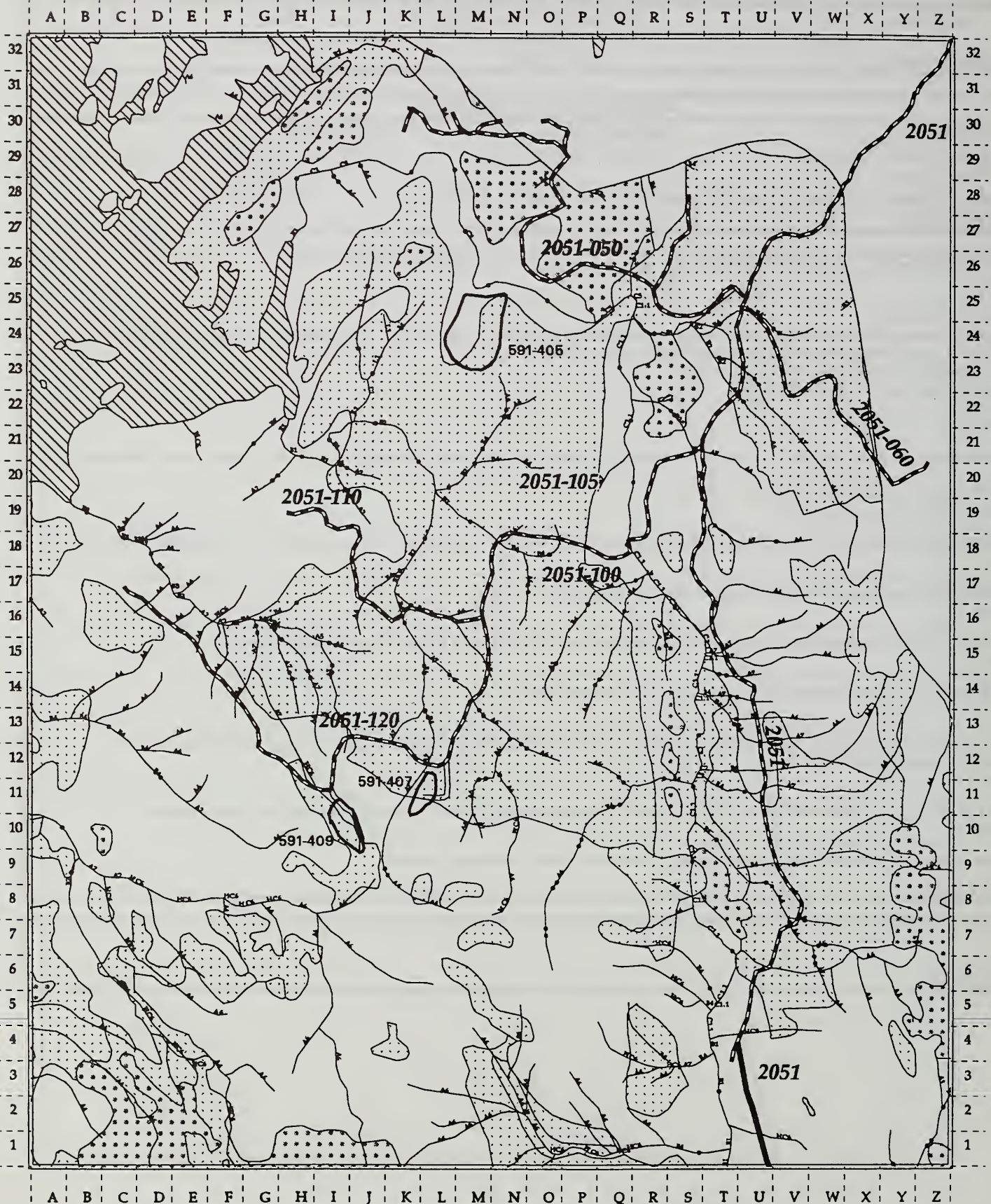
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - o

Mapscale 1:31680 (2 inch to Mile)



- | | | |
|----------------|---------------------|----------------|
| Class 1 Stream | Salt Water | Existing Roads |
| Class 2 Stream | Fresh Water Lakes | Proposed Roads |
| Class 3 Stream | High Value Wetlands | Selected Road |
| | Other Wetlands | |

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24

Road Data Card

Road Number: 71-79-21.1

ROD Road Number: 2051-120-098

M.P. :

To M.P. :

Actual Length (miles): .20

New or Reconstruct:

New

Unit(s) Accessed: 591-407

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: Collector

Traffic Service Level: C

Highway Safety Act Number: No

Design Vehicle: Log truck

Critical Vehicle: Lowboy

Intended Purpose and Use: Silvicultural treatment

Maintain Level: 1,2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction. No hydraulic sites present.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): No stream crossings.

Stream Crossings As Located (Class I Class II Class III): No stream crossings.

Cataloged Stream Crossings As Located: No stream crossings.

GEOLOGY/KARST as planned: No limestone or karst observed..

as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.

as located:

RECREATION/VISUALS as planned: Road is not seen from Priority Travel Route/Use Area.

as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.

as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils following road construction activities. (BMP 14.8)

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design for running skyline

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.

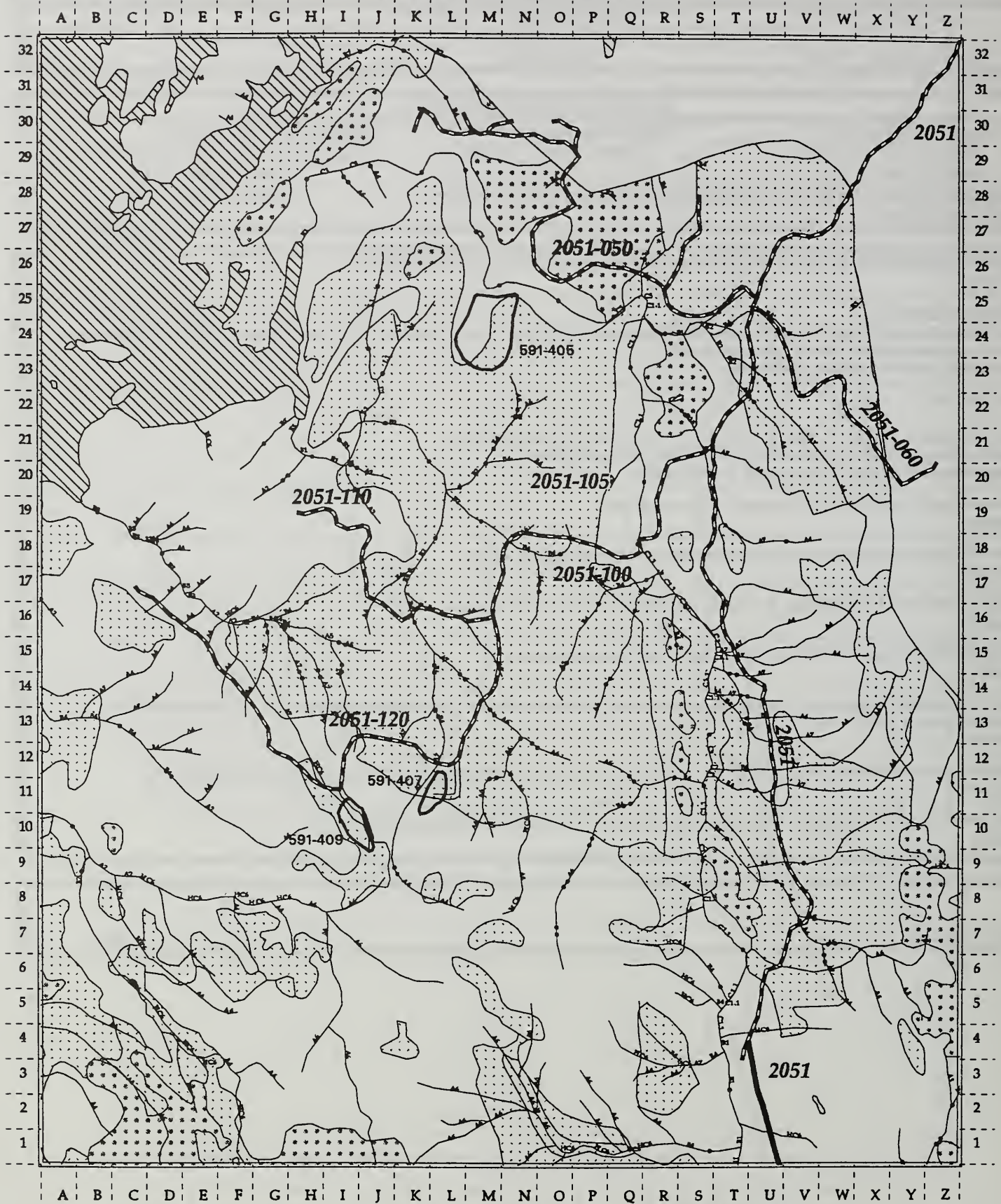
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - o

Mapscale 1:31680 (2 inch to Mile)



- | | | | | | |
|--|----------------|--|---------------------|--|----------------|
| | Class 1 Stream | | Salt Water | | Existing Roads |
| | Class 2 Stream | | Fresh Water Lakes | | Proposed Roads |
| | Class 3 Stream | | High Value Wetlands | | Selected Road |
| | | | Other Wetlands | | |

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24



Road Data Card

Road Number: 71-79-28.1

ROD Road Number: 2051-120-099

M.P. :

To M.P. :

Actual Length (miles): .27

New or Reconstruct:

New

Unit(s) Accessed: 591-409

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: Collector

Traffic Service Level: C

Highway Safety Act Number: No

Design Vehicle: Log truck

Critical Vehicle: Lowboy

Intended Purpose and Use: Silvicultural treatment

Maintain Level: 1,2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction, no hydraulic sites present.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): No stream crossings

Stream Crossings As Located (Class I Class II Class III): No stream crossings

Cataloged Stream Crossings As Located: No stream crossings.

GEOLOGY/KARST as planned: No limestone or karst observed.

as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.

as located:

RECREATION/VISUALS as planned: Maximum modification VQO. Road within the unit has no concerns.

as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.

as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils (BMP 14.8)

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design for running skyline

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.

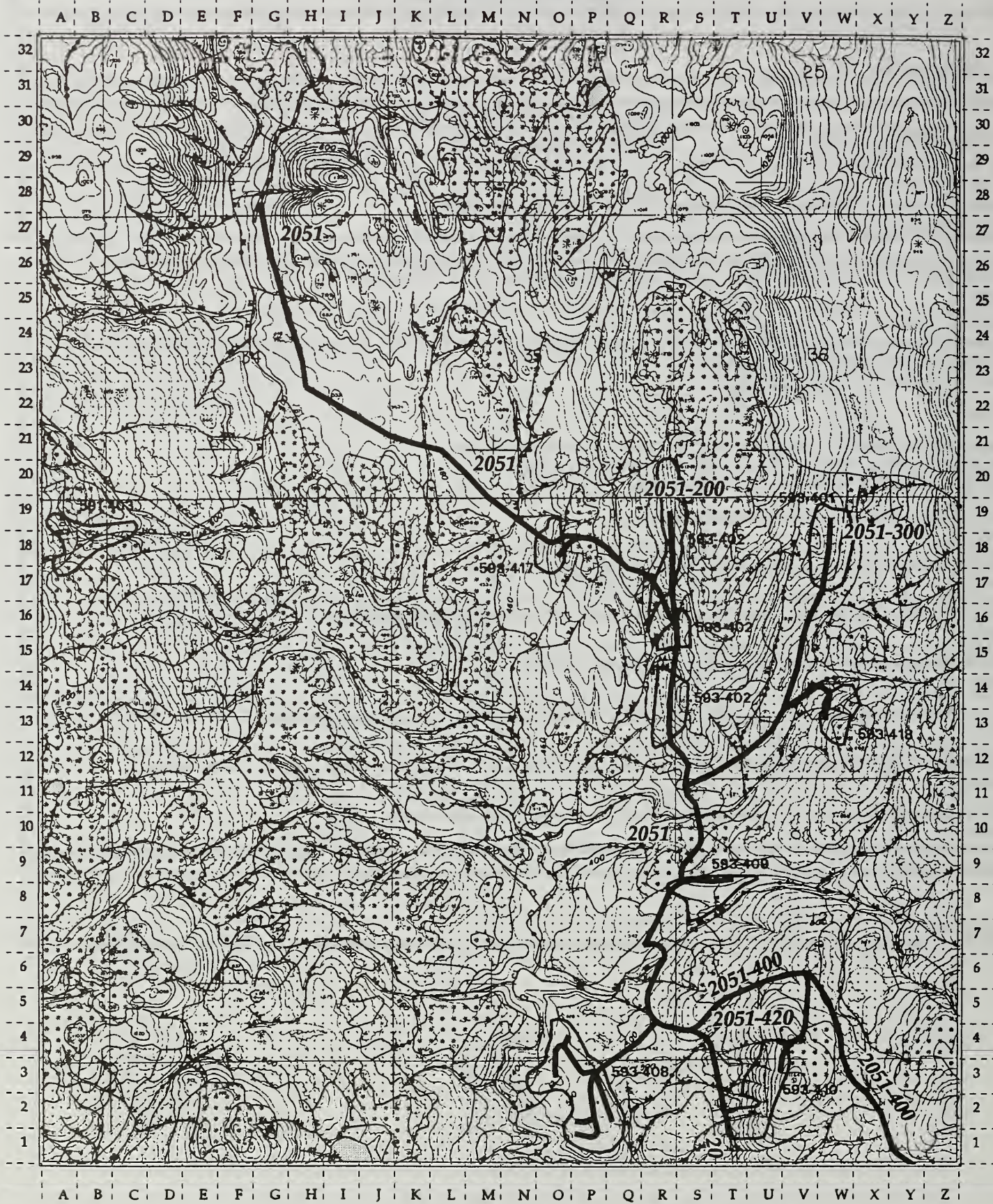
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - A

Mapscale 1:31680 (2 inch to Mile)



- | | | | | | |
|--|----------------|--|---------------------|--|----------------|
| | Class 1 Stream | | Salt Water | | Existing Roads |
| | Class 2 Stream | | Fresh Water Lakes | | Proposed Roads |
| | Class 3 Stream | | High Value Wetlands | | Selected Road |
| | | | Other Wetlands | | |

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24



Road Data Card

Road Number:	ROD Road Number: 2051-200	M.P. :	To M.P. :
	Actual Length (miles): .41	New or Reconstruct:	N
Unit(s) Accessed: 593-402	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: C,L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: 2		Closure Device: barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 2164', Construction: 70% Easy, 30% Medium, 0% Difficult, # of > 48" Culverts: 0; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossing: 0'; # of "V" notches: 1; Units accessed: 4 units; # of quarry Sites: 5; # of Switchbacks: 0; Ft. if Critical Grades: 0'.
Planned vs Implemented (describe changes and rational):
Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 1 - Class III):
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

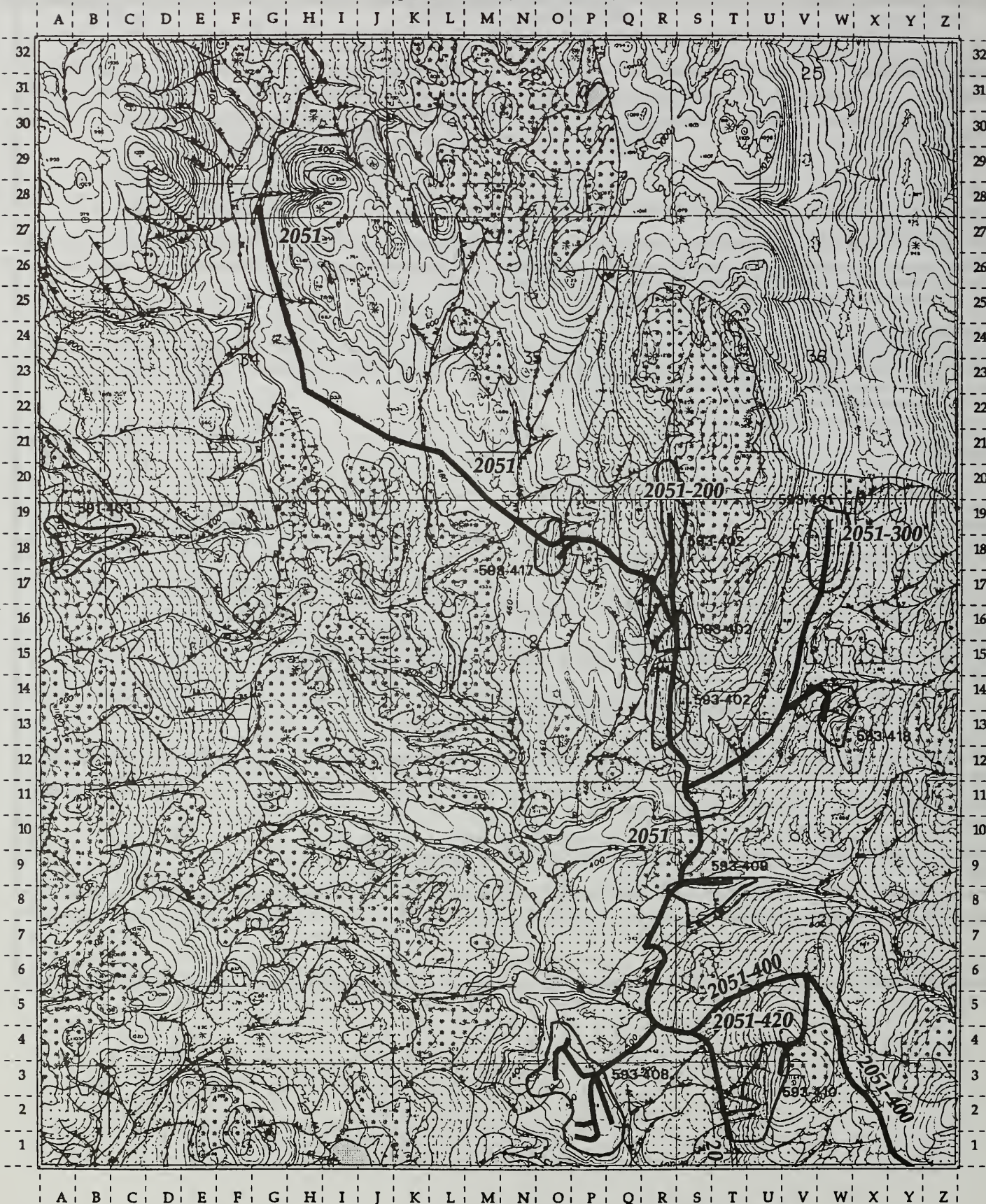
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - A

Mapscale 1:31680 (2 inch to Mile)



- | | | | | | |
|--|----------------|--|---------------------|--|----------------|
| | Class 1 Stream | | Salt Water | | Existing Roads |
| | Class 2 Stream | | Fresh Water Lakes | | Proposed Roads |
| | Class 3 Stream | | High Value Wetlands | | Selected Road |
| | | | Other Wetlands | | |

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24



Road Data Card

Road Number: 72-79-12.4	ROD Road Number: 2051-300	M.P. :	To M.P. :
Unit(s) Accessed: 593-401, 418	Actual Length (miles): 1.46	New or Reconstruct:	N
Road Locator:			

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: 1	Closure Device: Barrier	
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit	Erosion Control: Waterbar	
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 6350', Construction: 73% Easy, 10% Medium, 17% Difficult, # of > 48" Culverts: 1; # of bridges: 0; Ft. of cross slopes > 55%: 730; Ft. of Muskeg crossing: 1500'; # of "V" notches: 1; Units accessed: 4 units; # of quarry Sites: 5; # of Switchbacks: 0; Ft. if Critical Grades: 620'.
Planned vs Implemented (describe changes and rational):
Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (0 - Class I 1 - Class II 1 - Class III): Class II stream flows directly into class I and requires a fish timing window of July 18 to August 15.
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8). Oversteepened slopes require full bench construction and end haul of waste (BMP 14.7).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

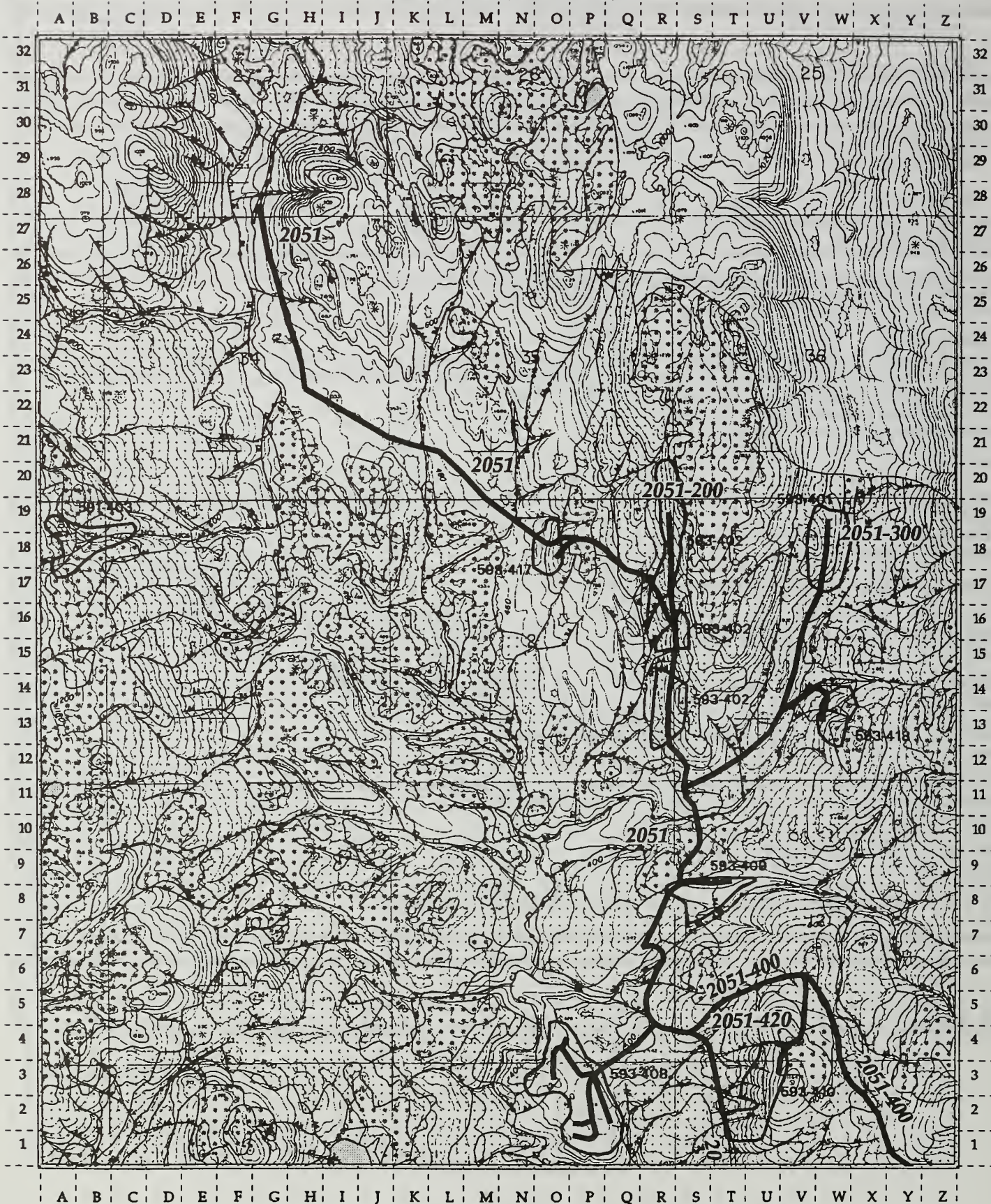
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - A

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
 —••— Class 2 Stream
 ——— Class 3 Stream



Salt Water

Fresh Water Lakes

High Value Wetlands

Other Wetlands

—•— Existing Roads
 —••— Proposed Roads
 ——— Selected Road

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24



Road Data Card

Road Number: 72-79-12.1	ROD Road Number: 2051-400	M.P. :	To M.P. :
Unit(s) Accessed: 593-431	Actual Length (miles): 1.86	New or Reconstruct:	N
Road Locator:			

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 7120', Construction: 84% Easy, 16% Medium, 0% Difficult, # of > 48" Culverts: 0; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossing: 3590'; # of "V" notches: 0; Units accessed: 1 units; # of quarry Sites: 0; # of Switchbacks: 0; Ft. if Critical Grades: 2215'.
Planned vs Implemented (describe changes and rational):
Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 - Class I 01 - Class II 0 - Class III):
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
Oversteepened slopes require full bench construction and end haul of waste (BMP 14.7).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

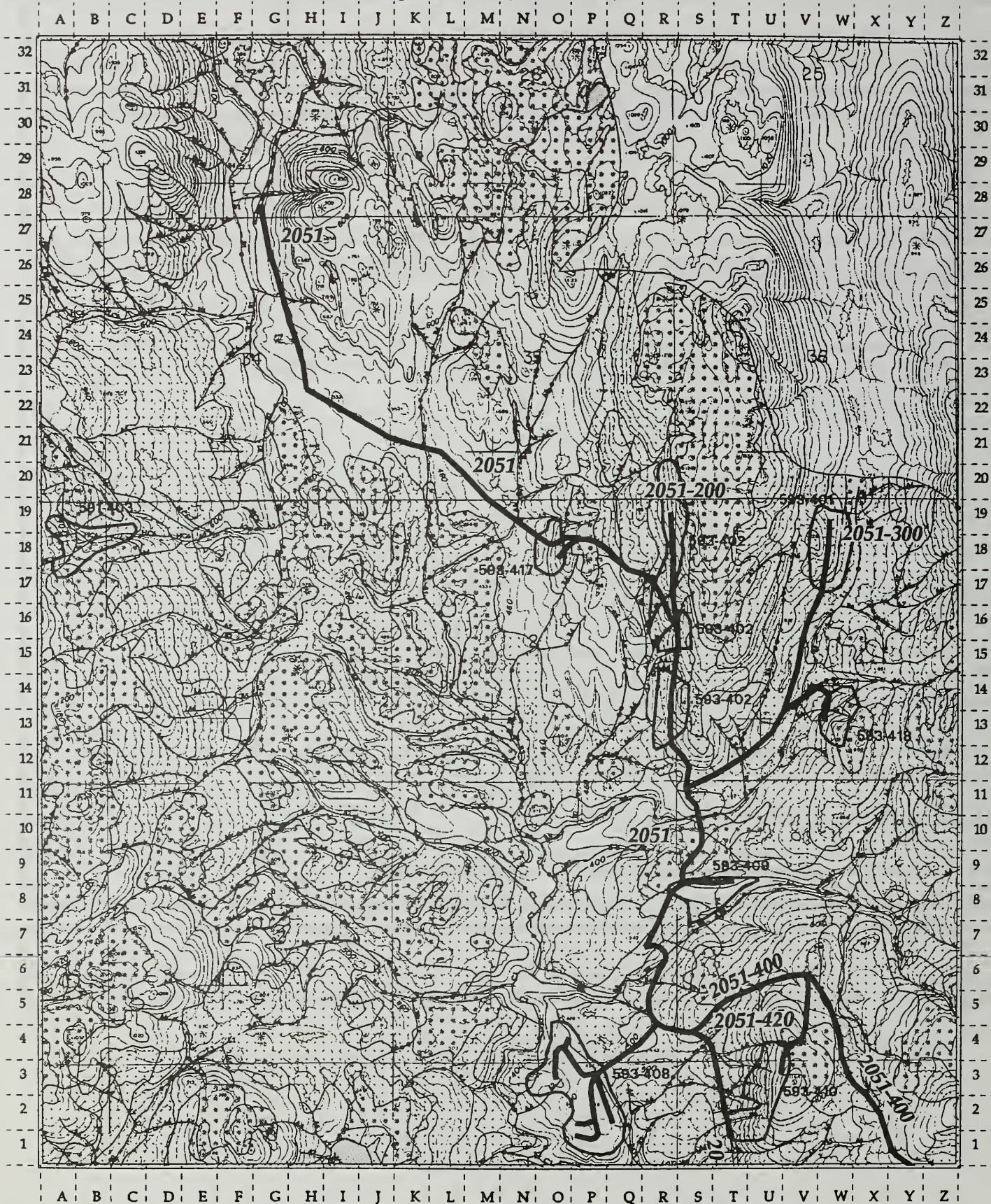
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - A

Mapscale 1:31680 (2 inch to Mile)



- Class 1 Stream
- Class 2 Stream
- Class 3 Stream



- Salt Water
- Fresh Water Lakes
- High Value Wetlands
- Other Wetlands

- Existing Roads
- Proposed Roads
- Selected Road

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24



Road Data Card

Road Number: 71-79-34.3	ROD Road Number: 2051-410	M.P.: To M.P.:
	Actual Length (miles): .43	New or Reconstruct: N
Unit(s) Accessed: 593-410	Road Location:	

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resources areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 3100', Construction: 0% Easy, 100% Medium, 0% Difficult, # of > 48" Culverts: 0; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Musking crossing: 0'; # of "V" notches: 5; Units accessed: 1 units; # of quarry sites: 0; # of Switchbacks: 0; Ft. of Critical Grades: 0'.
Planned vs Implemented (describe changes and rationale):
Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 - Class I 3 - Class II 2 - Class III):
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
Overstepped slopes require full bench construction and end haul of waste (BMP 14.7).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - A

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
—••— Class 2 Stream
— Class 3 Stream

Salt Water

Fresh Water Lakes

High Value Wetlands

Other Wetlands

— Existing Roads
= Proposed Roads
= Selected Road

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43

11.24



Road Data Card

Road Number: 72-79-12.2	ROD Road Number: 2051-420	M.P. :	To M.P. :
	Actual Length (miles): .43	New or Reconstruct:	N
Unit(s) Accessed: 593-410	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 2100', Construction: 100% Easy, 0% Medium, 0% Difficult, # of > 48" Culverts: 0; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossing: 0'; # of "V" notches: 0; Units accessed: 1 units; # of quarry Sites: 0; # of Switchbacks: 0; Ft. if Critical Grades: 0'.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III):

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8). Oversteepened slopes require full bench construction and end haul of waste (BMP 14.7).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

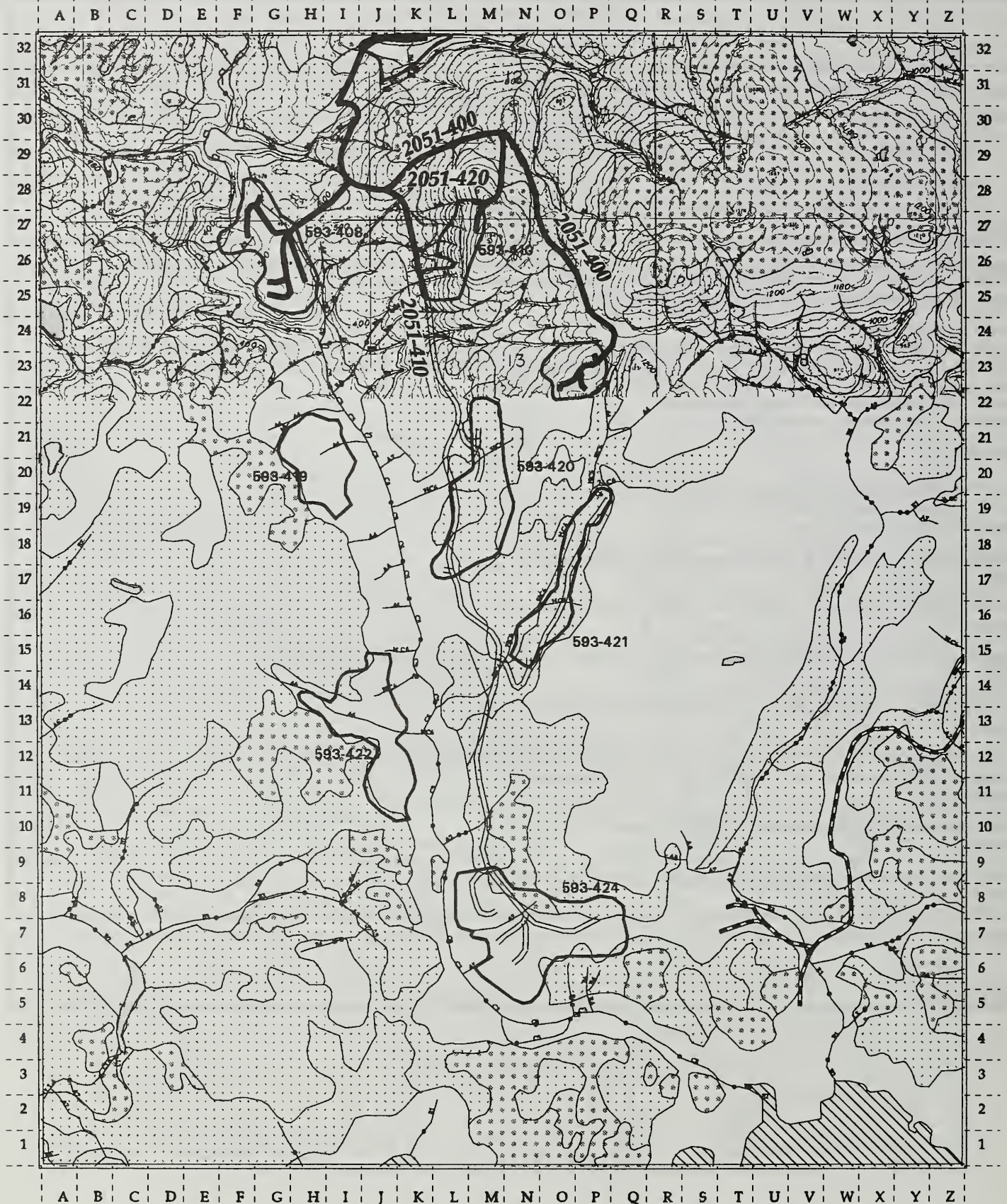
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2051 - H

Mapscale 1:31680 (2 inch to Mile)



Class 1 Stream
Class 2 Stream
Class 3 Stream



Salt Water

Fresh Water Lakes

High Value Wetlands

Other Wetlands

Existing Roads
Proposed Roads
Selected Road

Road Number Miles

2051	5.38
2051-105	1.28
2051-200	0.41
2051-300	1.46
2051-400	1.86
2051-410	0.43
2051-420	0.43
11.24	



Road Data Card

Road Number: 71-79-34.f	ROD Road Number: 2051-430	M.P.:	To M.P.:
	Actual Length (miles): .05	New or Reconstruct:	N
Unit(s) Accessed: 593-420	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: I		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 265', Construction: 100% Easy, 0% Medium, 0% Difficult, # of > 48" Culverts: 0; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossings: 0'; # of "V" notches: 0; Units accessed: 1 units; # of quarry sites: 0; # of Switchbacks: 0; Ft. if Critical Grades: 0'.

Planned vs Implemented (describe changes and rationale):

Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (0 - Class I 0 - Class II 0 - Class III):

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.

as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.

as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.

as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.6).
Oversteepened slopes require full bench construction and end haul of waste (BMP 14.7).

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.

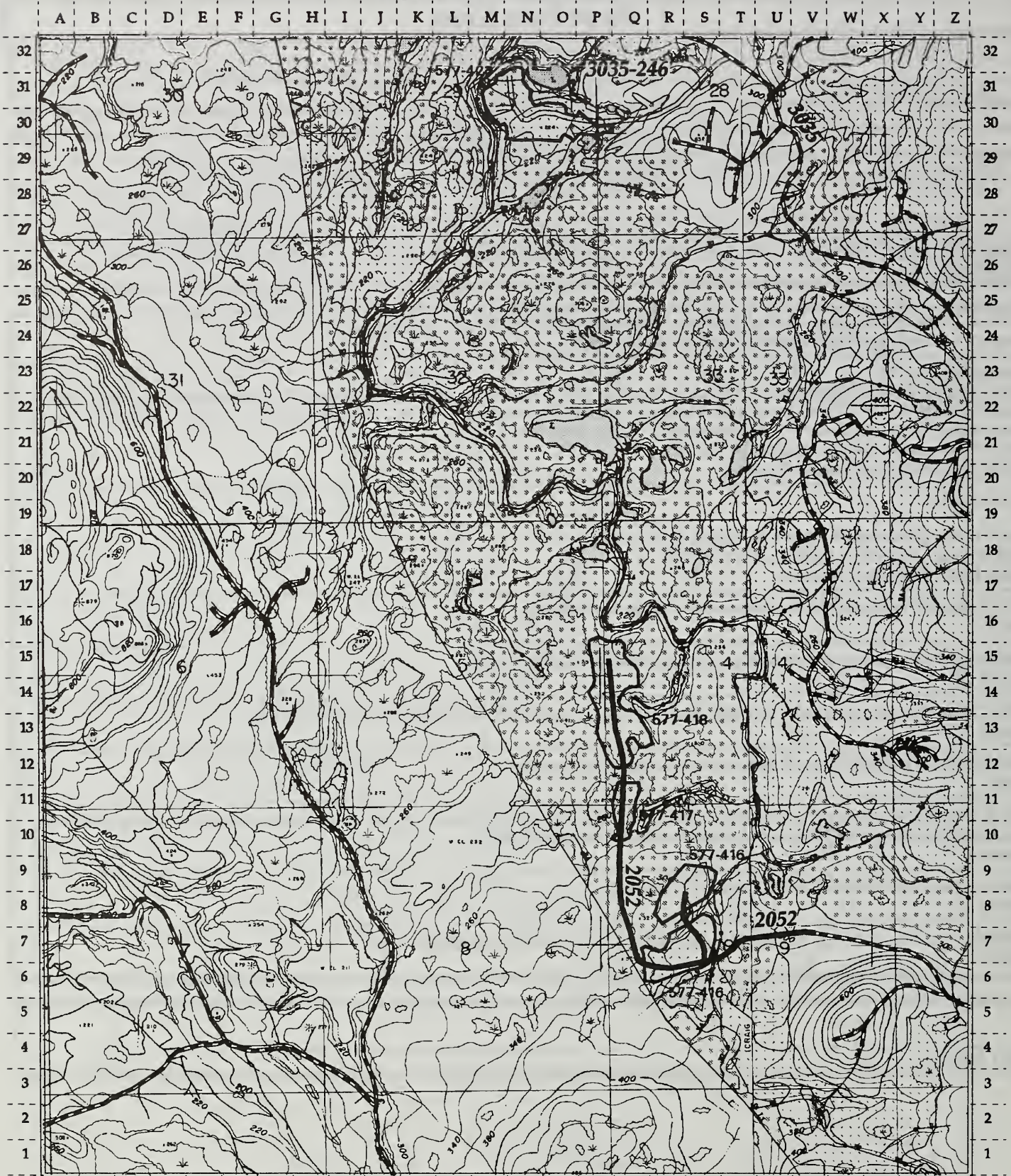
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 2052 - d

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
 —••— Class 2 Stream
 ——— Class 3 Stream



Salt Water
 Fresh Water Lakes
 High Value Wetlands
 Other Wetlands

—•— Existing Roads
 ——— Proposed Roads
 ——— Selected Road

Road Number Miles

2052 1.73
 2052-100 0.27
 =====
 2.00



Road Data Card

Road Number: 70-81-9	ROD Road Number: 2052-200	M.P.:	To M.P.:
	Actual Length (miles): 2.00	New or Reconstruct:	New
Unit(s) Accessed: 577-415, -416, -417, -418	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: C, L	Traffic Service Level: C, D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural Activities
Maintain Level: 2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): P		Erosion Control: Water Bar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy road construction with 1 - 48" culvert and 1 V-notch crossing.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (2 -Class I 0 - Class II 0 - Class III): Class I stream crossings requires a construction timing window of July 18 to August 15.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a Priority Travel Route/Use Area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Maintain access for future silvicultural activities.
as located:

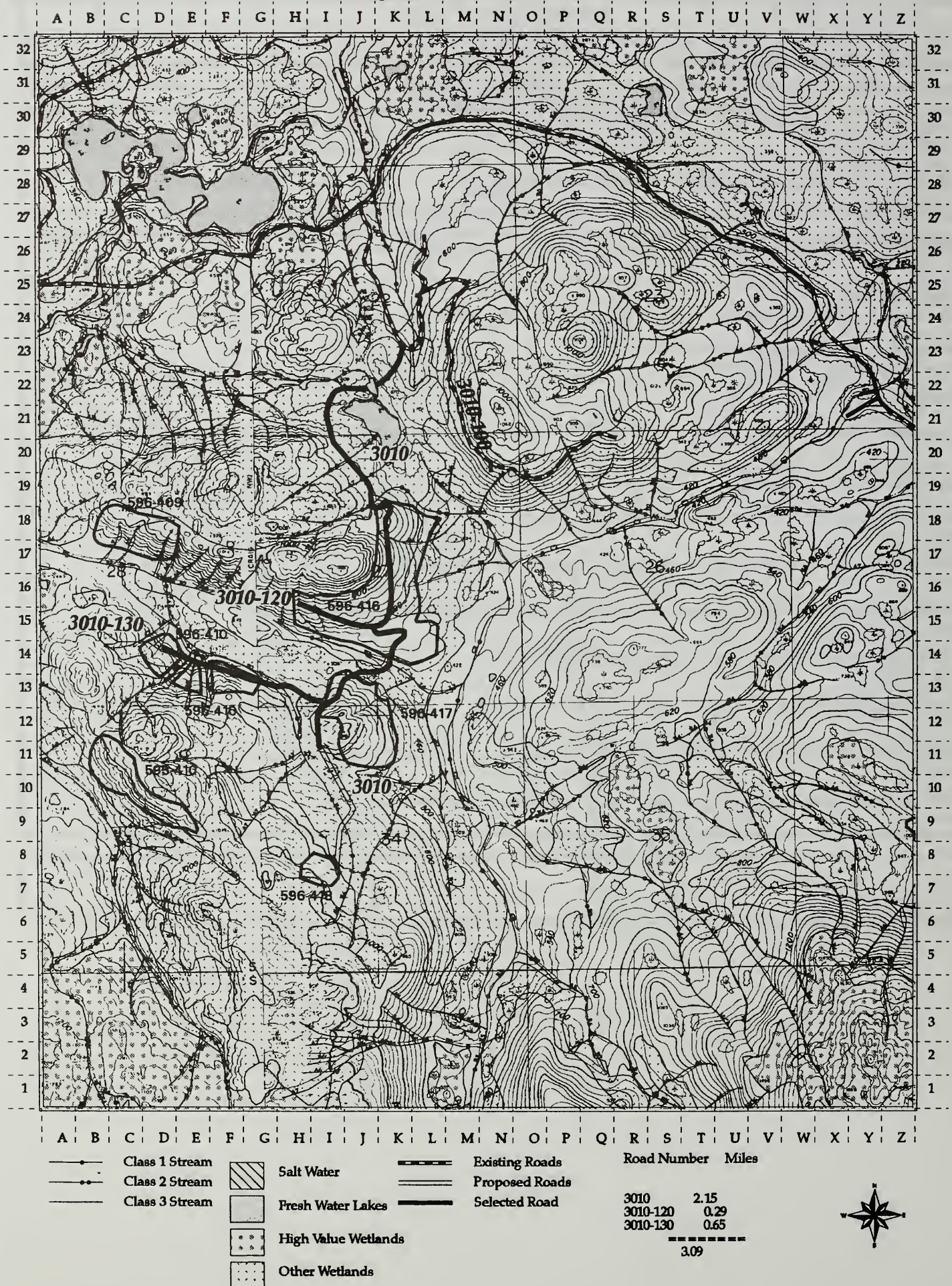
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3010 - x

Mapscale 1:31680 (2 inch to Mile)



Road Data Card

Road Number: 71-82-22

ROD Road Number: 3010

M.P. :

To M.P. :

Actual Length (miles): 2.15

New or Reconstruct:

New

Unit(s) Accessed: 596-416, 596-417

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: Local

Traffic Service Level: C,D

Highway Safety Act Number: No

Design Vehicle: Log truck

Critical Vehicle: Lowboy

Intended Purpose and Use: Silvicultural treatment

Maintain Level: 1,2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (0 - Class I 0 - Class II 0 - Class III):

Stream Crossings As Located (Class I Class II Class III): Three Class I crossings have timing windows from July 18-August 15. Road crosses two Class II streams. No timing requirements but culverts should provide for fish passage during normal and low flows. Road crosses a floodplain, provide adequate drainage structures.

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No concerns.

as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.

as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/Use Area.

as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.

as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils following road construction activities. (BMP 14.8)

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design.

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.

as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3010 - x

Mapscale 1:31680 (2 inch to Mile)



Class 1 Stream
Class 2 Stream
Class 3 Stream



Salt Water
Fresh Water Lakes
High Value Wetlands
Other Wetlands

Existing Roads
Proposed Roads
Selected Road

Road Number Miles

3010 2.15
3010-120 0.29
3010-130 0.65

3.09



Road Data Card

Road Number: 71-82-28

ROD Road Number: 3010-130

M.P. :

To M.P. :

Actual Length (miles): .65

New or Reconstruct:

New

Unit(s) Accessed: 596-416

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: Local

Traffic Service Level: C,D

Highway Safety Act Number: No

Design Vehicle: Log truck

Critical Vehicle: Lowboy

Intended Purpose and Use: Silvicultural treatment

Maintain Level: 1,2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): Two Class I, one Class II and one Class III stream crossings require timing windows of July 18-August 15.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No concerns.
as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/Use Area.
as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.
as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils following road construction activities. (BMP 14.8)
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design.
as located:

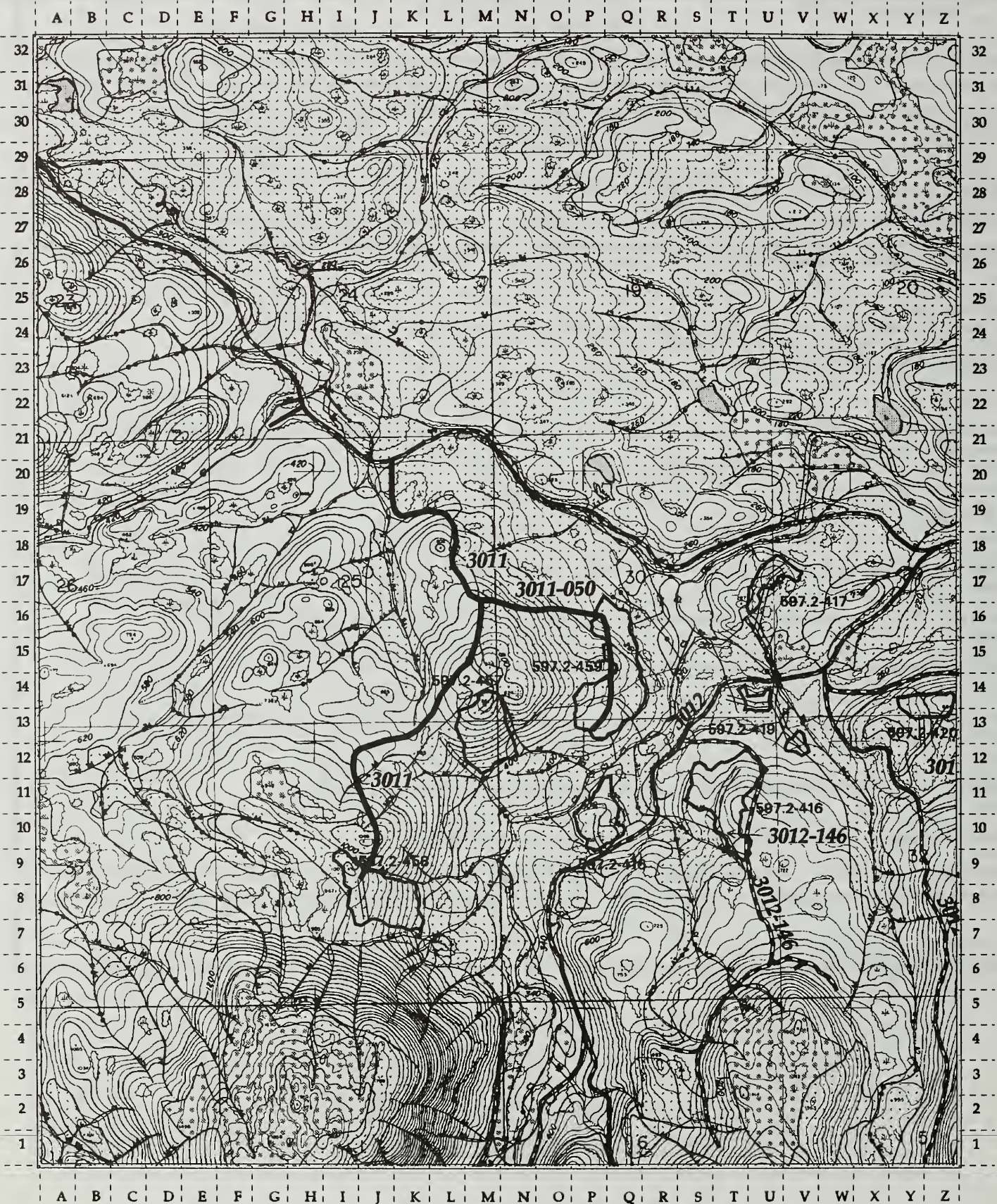
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3011 - y

Mapscale 1:31680 (2 inch to Mile)



- | | | | | | |
|------|----------------|--|---------------------|---------|----------------|
| —●— | Class 1 Stream | | Salt Water | —+— | Existing Roads |
| —●●— | Class 2 Stream | | Fresh Water Lakes | —+—+— | Proposed Roads |
| — | Class 3 Stream | | High Value Wetlands | —+—+—+— | Selected Road |
| | | | Other Wetlands | | |

Road Number Miles

3011 1.97
3011-050 0.86

2.83



Road Data Card

Road Number: 71-82

ROD Road Number: 3011

M.P.: 0

To M.P.: 0

Actual Length (miles): 2.83

New or Reconstruct:

New

Unit(s) Accessed: 597.2-468, -467, -458

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: C, L

Traffic Service Level: C, D

Highway Safety Act Number: :No

Design Vehicle: LT

Critical Vehicle: LB

Intended Purpose and Use: Silvicultural Activities

Maintain Level: 2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): P

Erosion Control: Water Bar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Review junction with existing USFS 30 road. This road requires 1 - 48" culvert and 3 quarry sites.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (1 -Class I 2 - Class II 0 - Class III): Class I stream crossing requires a construction timing window of July 18 to August 15. Stream crossed by the road drains directly to a Class I stream, consequently, a similar fish timing window of July 18 to August 15 is required.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.

as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.

as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a Priority Travel Route/Use Area.

as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.

as located:

SOILS / WATERSHED as planned: Oversteepened slopes may require full bench construction and end haul of waste (BMP 14.7). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Maintain access for future silvicultural activities.

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest site.

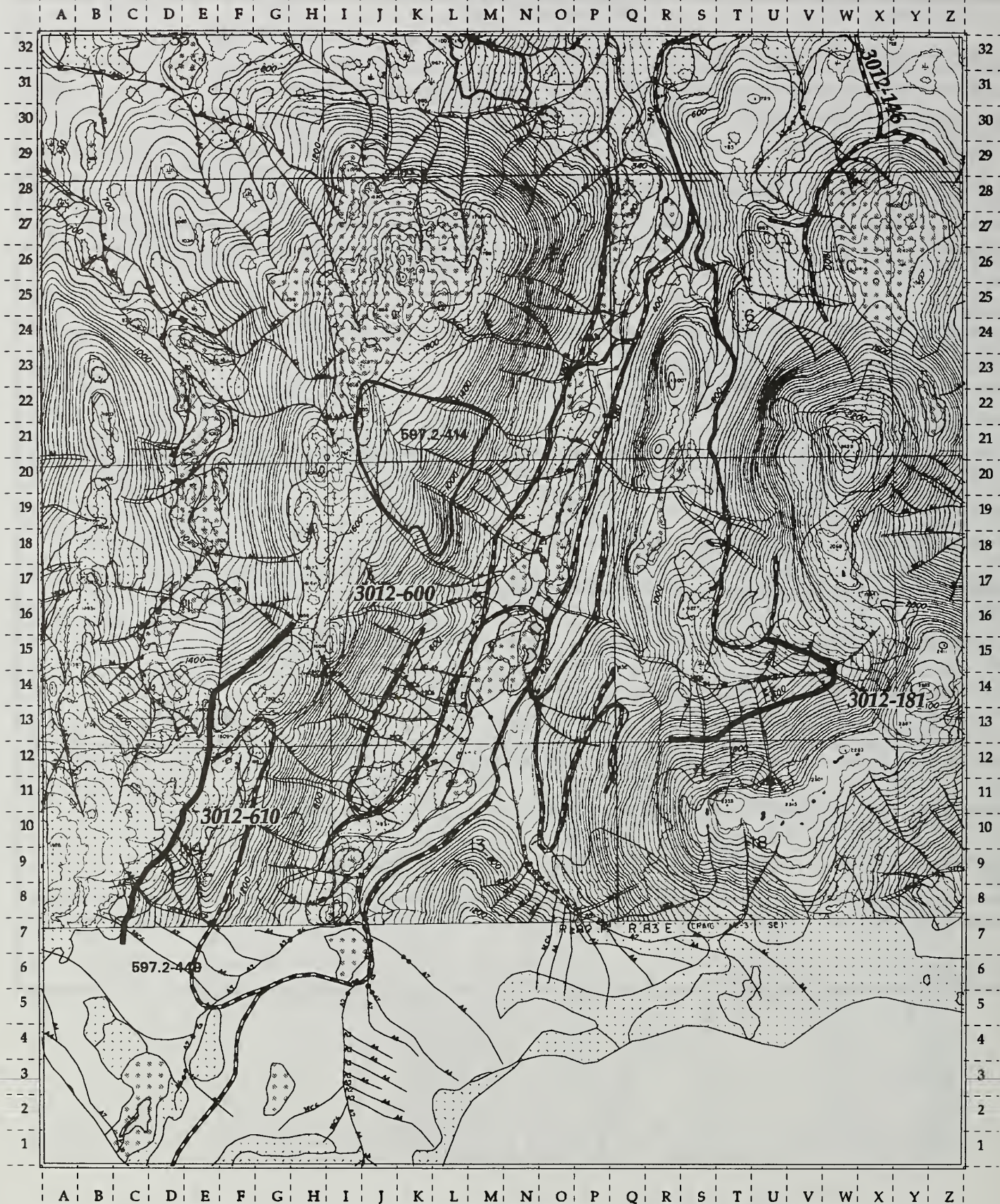
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3012 - F

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
 —••— Class 2 Stream
 ——— Class 3 Stream



Existing Roads
 Proposed Roads
 Selected Road

Road Number Miles

3012-125 0.44
 3012-146 0.43
 3012-181 0.95
 3012-600 1.47
 3012-610 0.75

4.03



Road Data Card

Road Number: 71-83	ROD Road Number: 3012	M.P. :	To M.P. :
	Actual Length (miles): 4.03	New or Reconstruct:	New
Unit(s) Accessed: 597.2-416, -420	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: C, L	Traffic Service Level: C, D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural Activities
Maintain Level: 2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): P		Erosion Control: Water Bar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): These are all spur roads off of an existing USFS road.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): No concerns

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a Priority Travel Route/Use Area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Maintain access for future silvicultural activities.
as located:

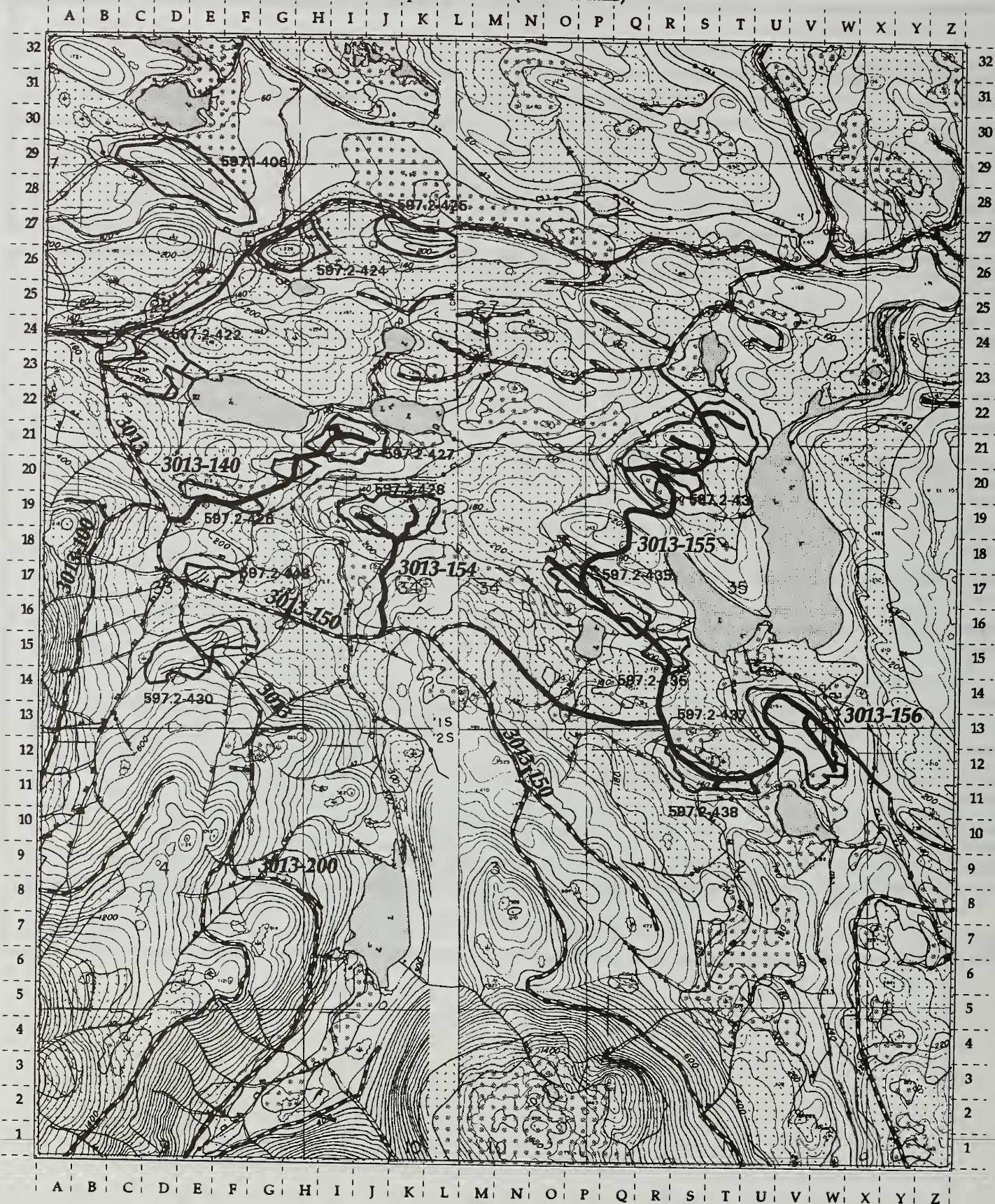
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest site.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3013 - D

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
 —••— Class 2 Stream
 ——— Class 3 Stream



Salt Water



Fresh Water Lakes



High Value Wetlands



Other Wetlands



Existing Roads



Proposed Roads



Selected Road

Road Number Miles

3013-140 0.95

3013-154 0.71

3013-155 3.33

3013-156 1.63

6.62



Road Data Card

Road Number: 71-83-33.1	ROD Road Number: 3013-140	M.P. :	To M.P. :
	Actual Length (miles): .95	New or Reconstruct:	N
Unit(s) Accessed: 597-426, 427	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): DISC		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Construction: 80% Easy, 20% Medium, 0% Difficult; # of > 48" Culverts: 0; # of bridges: 0; Ft. of Cross Slopes > 55%: 0; # of Switchbacks: 0; Ft. of critical grades: 175'. Units accessed; 2 units; # of Quarry Sites: 0; Ft. of Muskeg Crossing; 1081.
 Planned vs Implemented (describe changes and rational):
 Rock Source(s) Location and Special Mitigation: Could provide recreation access to two lakes.

FISH HABITAT

Stream Crossings As Planned (0 - Class I 0 - Class II 0 - Class III):
 Stream Crossings As Located (Class I Class II Class III):
 Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW.
 as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
 as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area.
 as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
 as located:

SOILS / WATERSHED as planned: Oversteepened slopes require full bench construction and end haul of waste. All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
 as located:

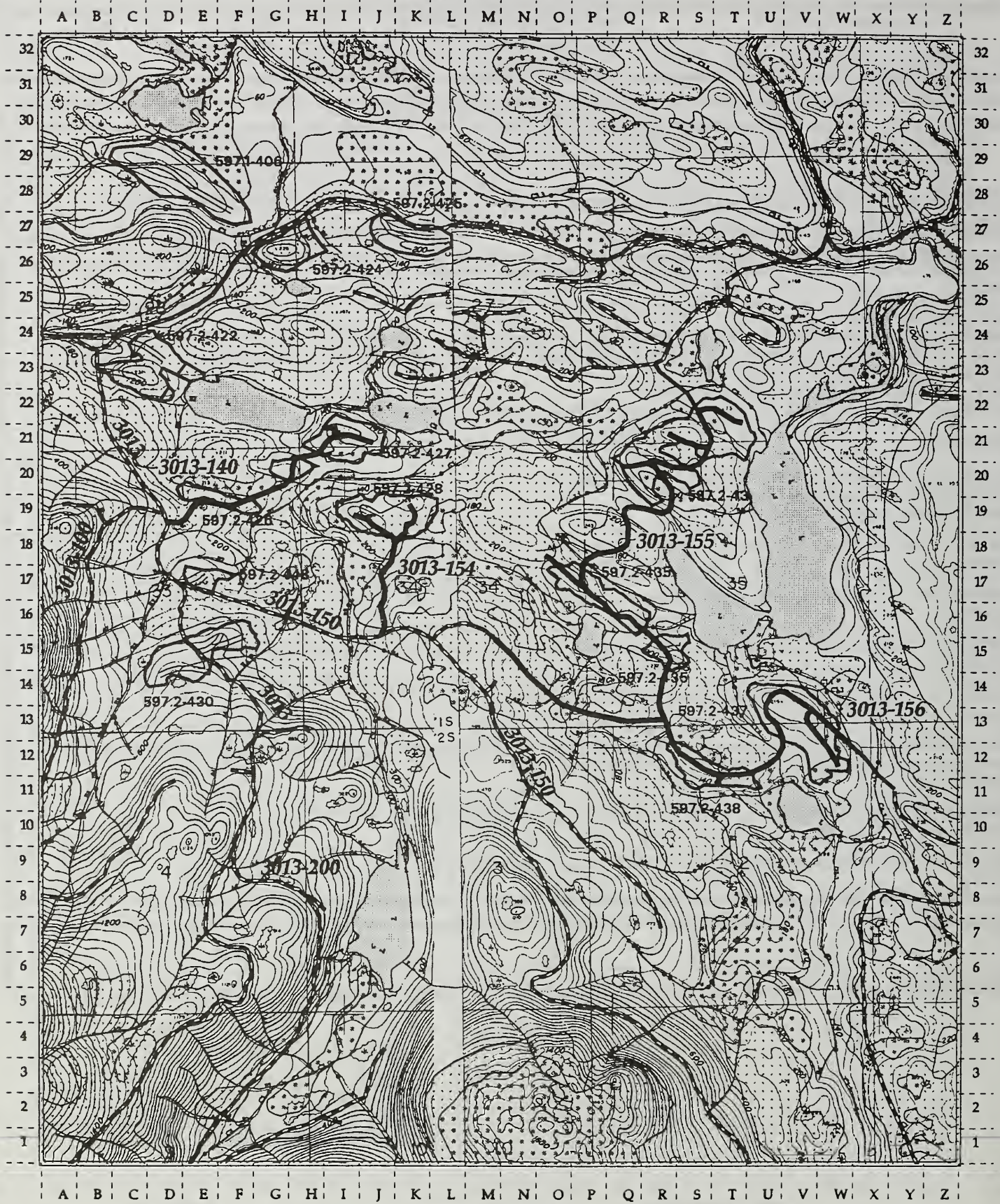
TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses three timber harvest units.
 as located:



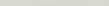


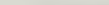


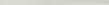

WILDLIFE as planned: Road does not approach within 1/2 mile of known bald eagle nest sites.
 as located:

Ranger's Signature	Date

Control Lake Project Area Draft Road Card 3013 - D

Mapscale 1:31680 (2 inch to Mile)



	Class 1 Stream		Salt Water		Existing Roads	Road Number	Miles
	Class 2 Stream		Fresh Water Lakes		Proposed Roads		
	Class 3 Stream		High Value Wetlands		Selected Road	3013-140	0.95
			Other Wetlands			3013-154	0.71
						3013-155	3.33
						3013-156	1.63
							6.62



Road Data Card

Road Number: 71-83-34.2	ROD Road Number: 3013-154	M.P. :	To M.P. :
	Actual Length (miles): .71	New or Reconstruct:	N
Unit(s) Accessed: 597-428	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): ELIM		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Construction: 100% Easy, 0% Medium, 0% Difficult; # of > 48" Culverts: 0; # of bridges: 0; Ft. of Cross Slopes >55%: 0'; # of Switchbacks: 0; Ft. of critical grades: 0'. Units accessed; 1 units; # of Quarry Sites: 0; Ft. of Muskeg Crossing: 1081.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: Could provide recreation access to two lakes.

FISH HABITAT

Stream Crossings As Planned (0 - Class I 0 - Class II 0 - Class III):

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW.

as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.

as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area.

as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.

as located:

SOILS / WATERSHED as planned: Oversteepened slopes require full bench construction and end haul of waste. All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses three timber harvest units.

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of known bald eagle nest sites.

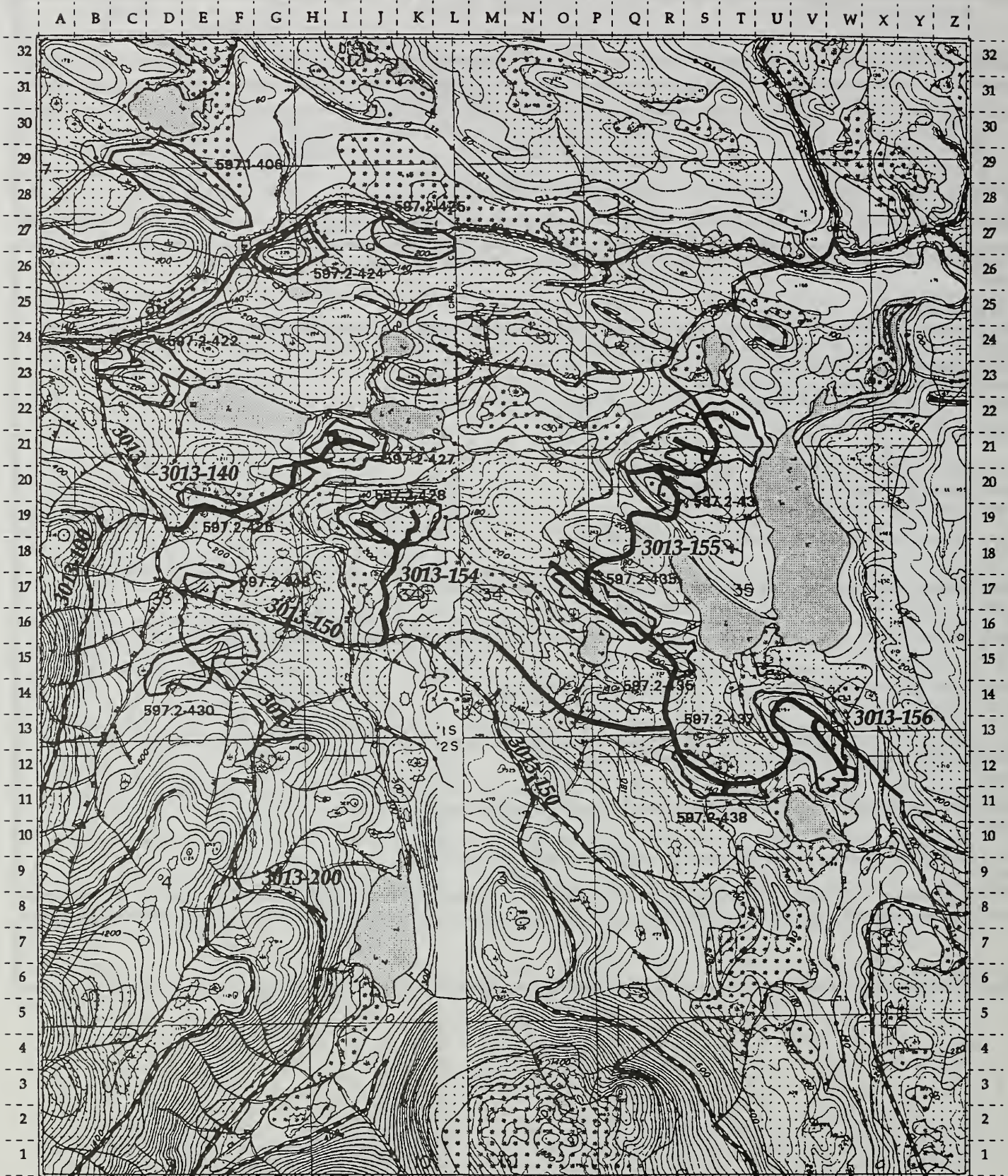
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3013 - D

Mapscale 1:31680 (2 inch to Mile)



- Class 1 Stream
- Class 2 Stream
- Class 3 Stream



- Salt Water
- Fresh Water Lakes
- High Value Wetlands
- Other Wetlands

- Existing Roads
- Proposed Roads
- Selected Road

Road Number Miles

3013-140	0.95
3013-154	0.71
3013-155	3.33
3013-156	1.63

6.62



Road Data Card

Road Number: 72-83-1	ROD Road Number: 3013-155	M.P. :	To M.P. :
	Actual Length (miles): 3.33	New or Reconstruct:	N
Unit(s) Accessed: 597-434, 435	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L,C	Traffic Service Level: C,D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1,2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): ELIM		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Construction: 64% Easy, 32% Medium, 4% Difficult; # of > 48" Culverts: 1; # of bridges: 1; Ft. of Cross Slopes > 55%: 0'; # of Switchbacks: 2; Ft. of critical grades: 850'. Units accessed; 1 units; # of Quarry Sites: 0; Ft. of Muskeg Crossing: 891.
Planned vs Implemented (describe changes and rational):
Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (2 -Class I 0 - Class II 0 - Class III): Class I stream crossing requires a timing window of July 18 to August 15. Road within unit 597-435 crosses stream with a floodplai which requires placement of culverts on each side of stream to pass flood flows.
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: Oversteepened slopes require full bench construction and end haul of waste. All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8). During bridge instalation, erodible material will not be deposited in live streams and sediment laden water pumped away from foundation excavation will be pumped to settling areas identified during final design (BMP 14.17).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses three timber harvest units.
as located:

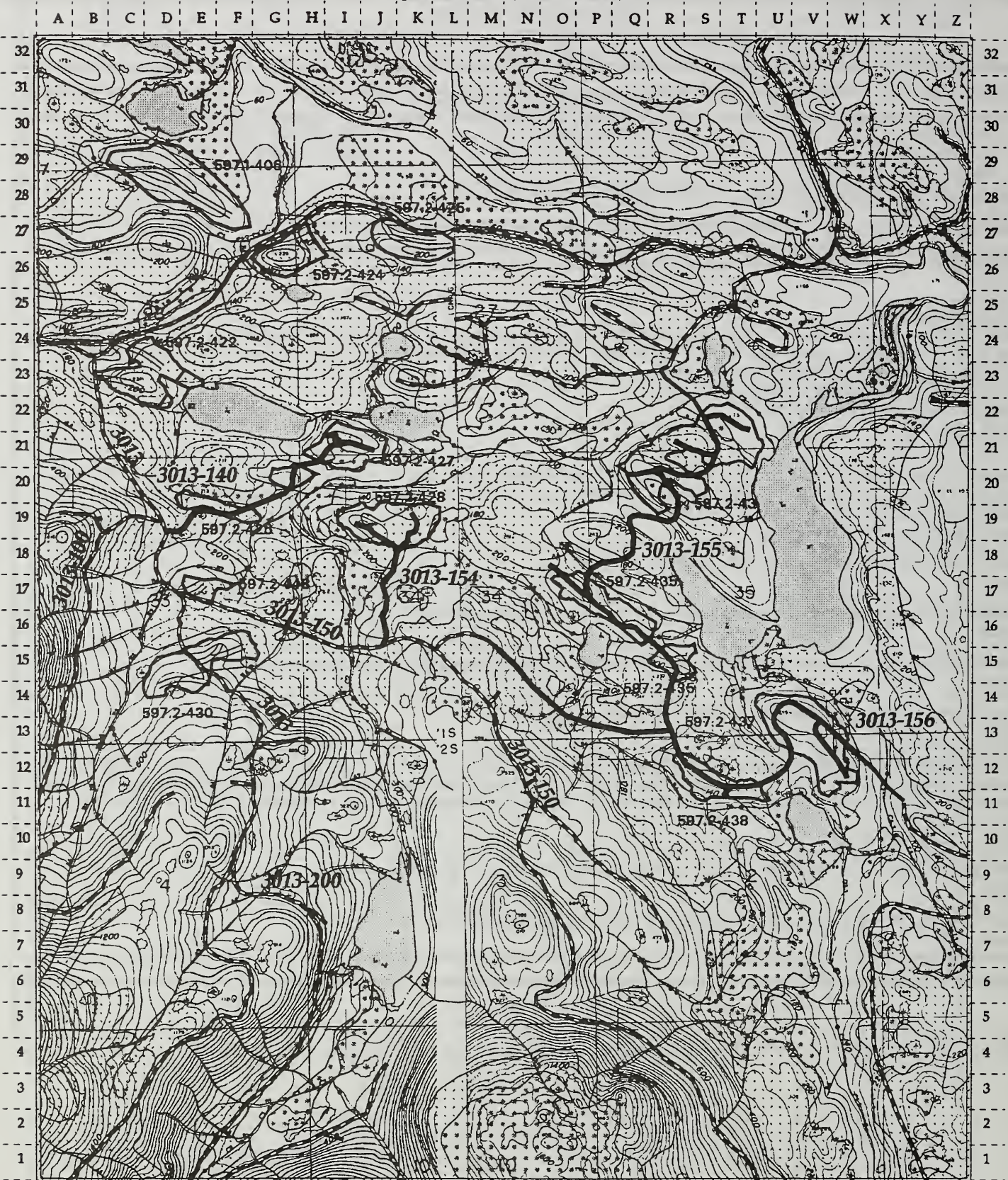
WILDLIFE as planned: Road does not aproach within 1/2 mile of known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3013 - D

Mapscale 1:31680 (2 inch to Mile)



- | | | |
|----------------|---------------------|----------------|
| Class 1 Stream | Salt Water | Existing Roads |
| Class 2 Stream | Fresh Water Lakes | Proposed Roads |
| Class 3 Stream | High Value Wetlands | Selected Road |
| | Other Wetlands | |

Road Number Miles

3013-140	0.95
3013-154	0.71
3013-155	3.33
3013-156	1.63

6.62



Road Data Card

Road Number: 71-83-1.1, 71-83-34	ROD Road Number: 3013-156	M.P. :	To M.P. :
	Actual Length (miles): 1.63	New or Reconstruct:	N
Unit(s) Accessed: 597-438, 437	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: L,C	Traffic Service Level: C, D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1,2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): ELIM		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Construction: 100% Easy, 0% Medium, 0% Difficult; # of > 48" Culverts: 1; # of bridges: 1; Ft. of Cross Slopes >55%: 0'; # of Switchbacks: 0; Ft. of critical grades: 0'. Units accessed; 1 units; # of Quarry Sites: 0; Ft. of Muskeg Crossing: 1000.
Planned vs Implemented (describe changes and rational):
Rock Source(s) Location and Special Mitigation: Could provide recreation access to two lakes.

FISH HABITAT

Stream Crossings As Planned (2 - Class I 0 - Class II 0 - Class III): Class I stream crossings require a timing window of July 18 to August 15.
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses two timber harvest units.
as located:

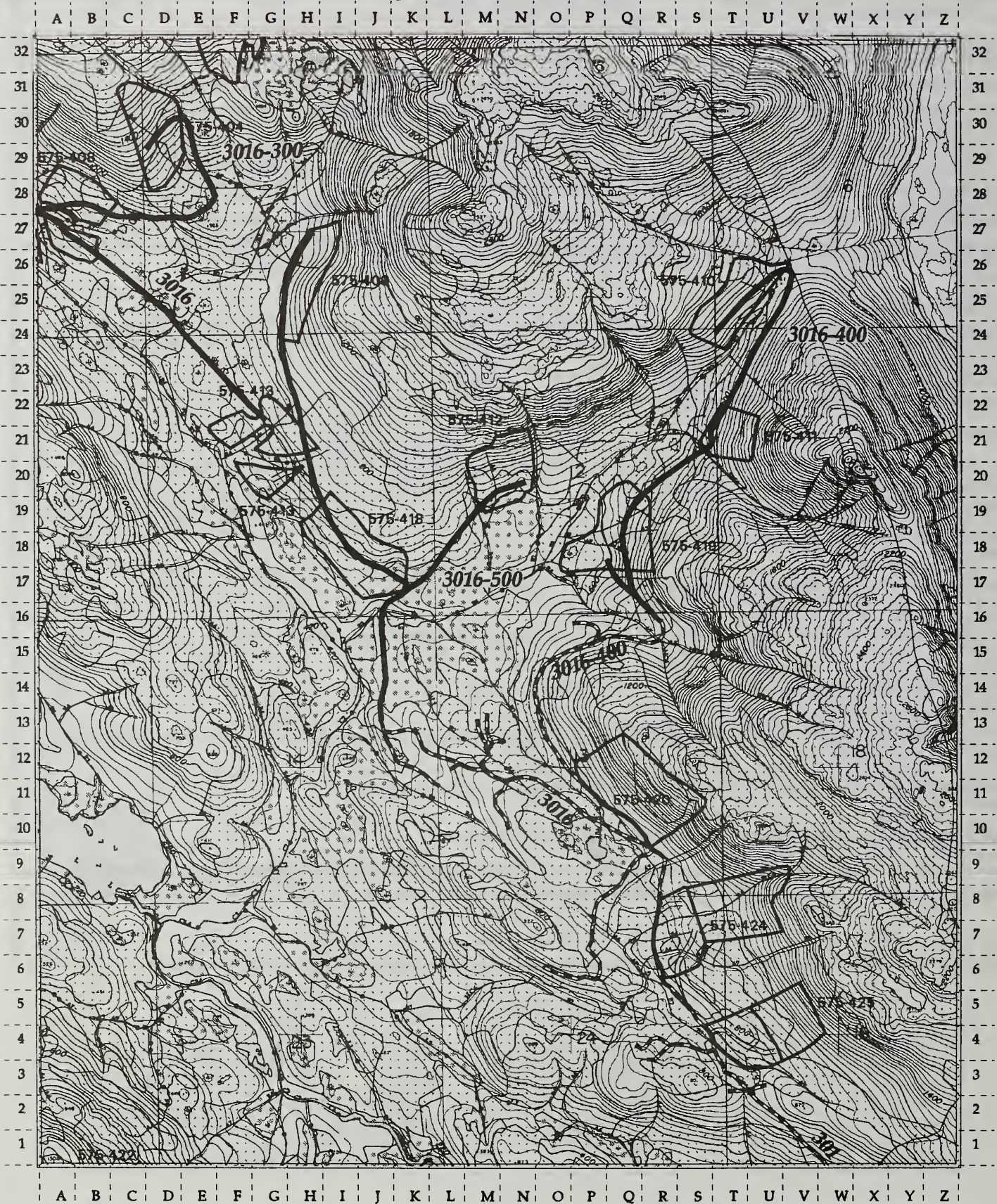
WILDLIFE as planned: Road does not approach within 1/2 mile of known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3016 - h

Mapscale 1:31680 (2 inch to Mile)



- | | | | | | |
|-------|----------------|--|---------------------|---------|----------------|
| —●— | Class 1 Stream | | Salt Water | — — — | Existing Roads |
| —●●— | Class 2 Stream | | Fresh Water Lakes | ==== | Proposed Roads |
| — — — | Class 3 Stream | | High Value Wetlands | — — — — | Selected Road |
| | | | Other Wetlands | | |

Road Number Miles

3016	2.15
3016-300	1.26
3016-400	2.02
3016-500	0.57
3016-600	0.94

6.93



Road Data Card

Road Number: 70-82-3.1	ROD Road Number: 3016	M.P. :	To M.P. :
	Actual Length (miles): 1.59	New or Reconstruct:	N
Unit(s) Accessed: 575-404, 407, 408	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: C,L	Traffic Service Level: C,D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural activities
Maintain Level: 2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 8437', Construction: 97% Easy, 3% Medium, 0% Difficult, # of > 48" Culverts: 2; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossing: 355'; # of "V" notches: 0; Units accessed: 3 units; # of quarry Sites: 1; # of Switchbacks: 1; Ft. if Critical Grades: 516'.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (1 - Class I 1 - Class II 5 - Class III): Class I stream crossing requires a construction timing window of July 18 to August 15. Road crosses a class II stream. no timing restrictions are necessary but culverts will be designed to allow fish passage during normal and low flows, and to minimize downstream scour.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

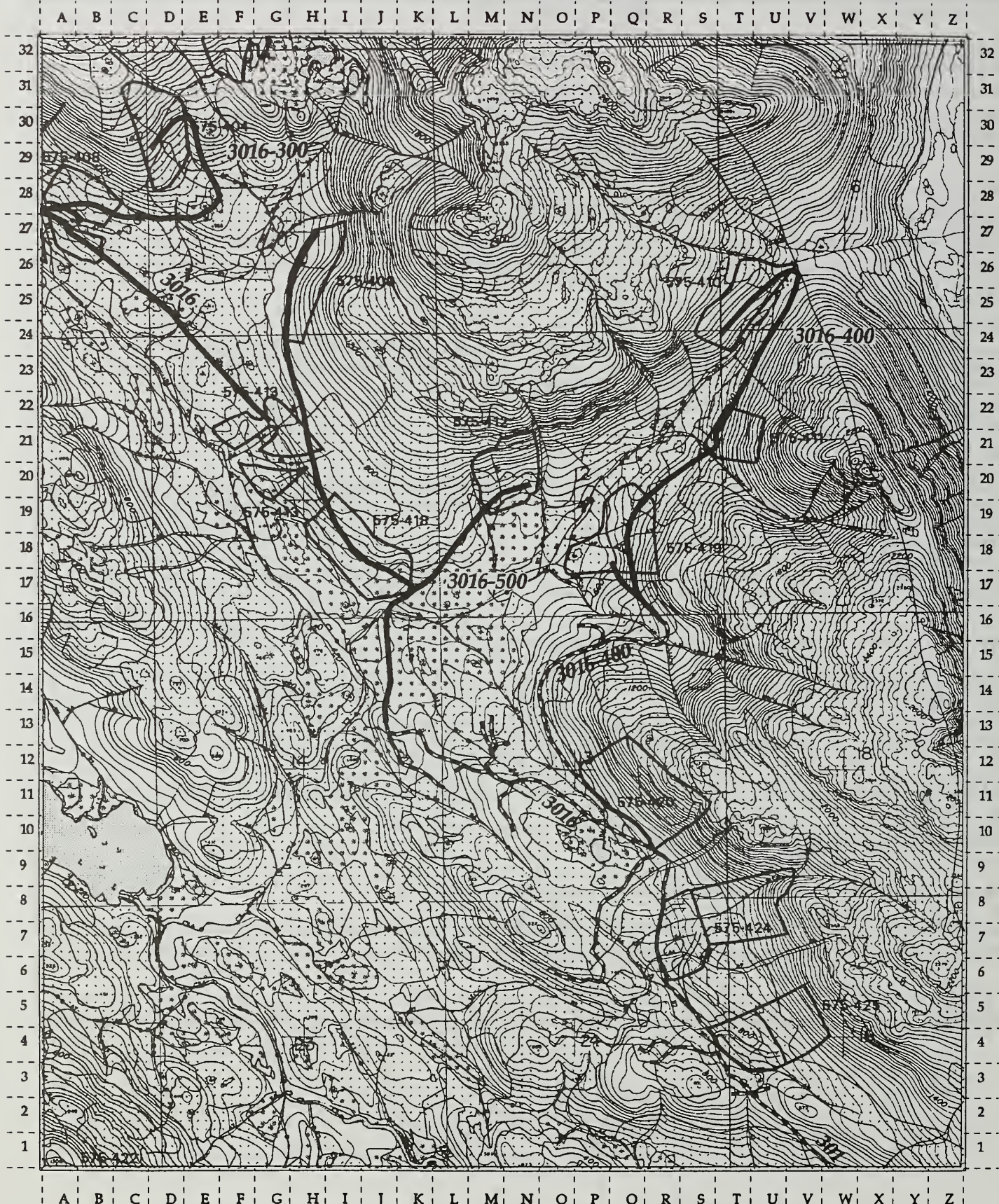
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3016 - h

Mapscale 1:31680 (2 inch to Mile)



Class 1 Stream
Class 2 Stream
Class 3 Stream



Salt Water



Fresh Water Lakes



High Value Wetlands



Other Wetlands



Existing Roads



Proposed Roads



Selected Road

Road Number Miles

3016	2.15
3016-300	1.26
3016-400	2.02
3016-500	0.57
3016-600	0.94
6.93	



Road Data Card

Road Number: 70-82-12	ROD Road Number: 3016-400	M.P. : To M.P. :
	Actual Length (miles): 2.02	New or Reconstruct: N
Unit(s) Accessed: 575-419, 411, 410	Road Locator:	

ROAD MANAGEMENT OBJECTIVES

Functional Class: L	Traffic Service Level: D	Highway Safety Act Number: No
Design Vehicle: LT	Critical Vehicle: LB	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural concern
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Construction: 90% Easy, 10% Medium, 0% Difficult; # of > 48" Culverts: 0; # of bridges: 0; Ft. of Cross Slopes > 55%: 140'; # of Switchbacks: 0; Ft. of critical grades: 1000'. Units accessed; 3 units; # of Quarry Sites: 1; Ft. of Muskeg Crossing: 0.
Planned vs Implemented (describe changes and rational):
Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 - Class I 2 - Class II 4 - Class III): Class II streams crossed by the road drain directly into a Class I stream, fish timing of July 18 to August 15 is necessary.
Stream Crossings As Located (Class I Class II Class III):
Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No known Karst located in road ROW.
as located:

LANDS/MINERALS as planned: No state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/use Area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: Oversteepened slopes require full bench construction and end haul of waste. All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road accesses three timber harvest units.
as located:

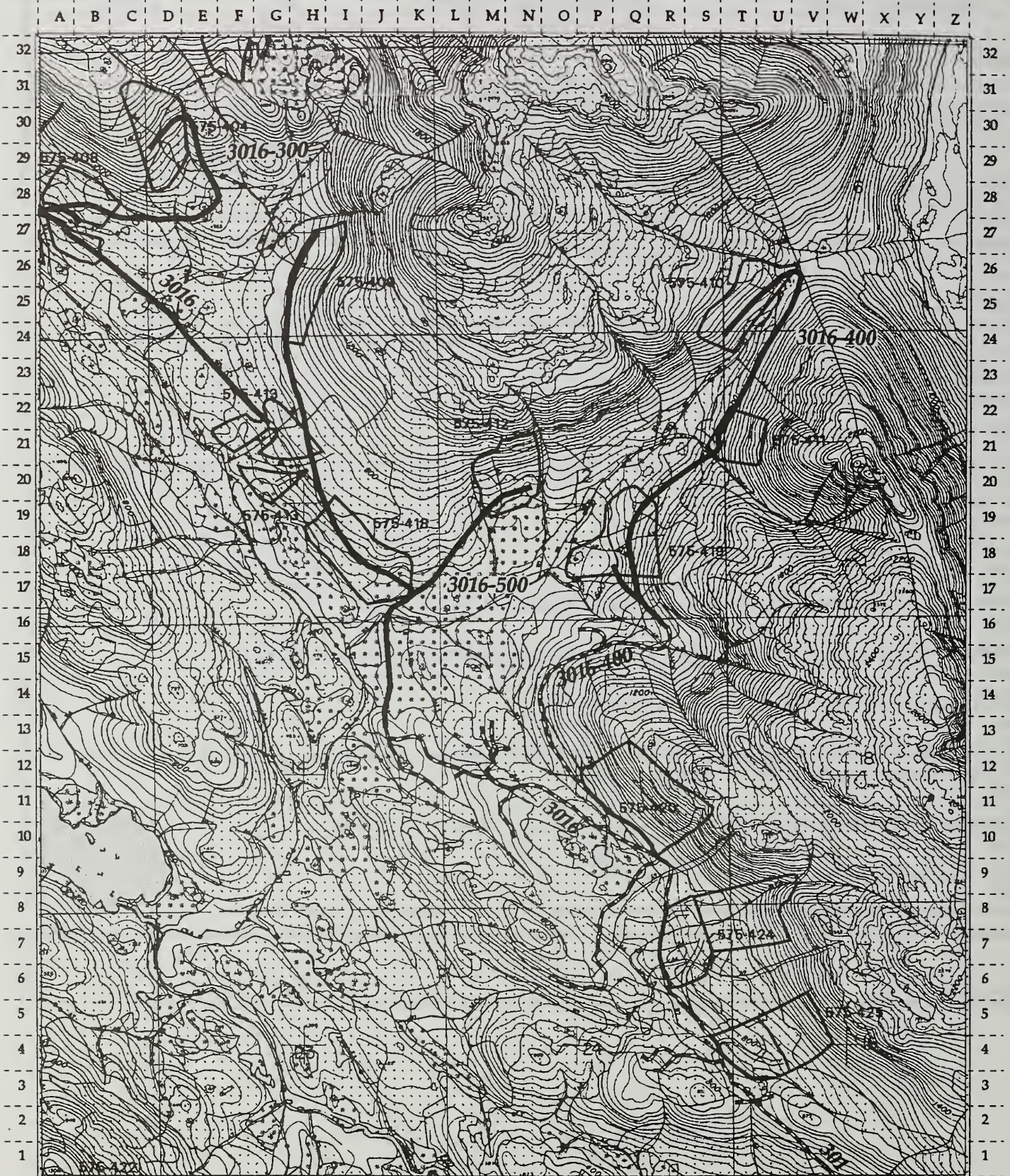
WILDLIFE as planned: Road does not approach within 1/2 mile of known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3016 - h

Mapscale 1:31680 (2 inch to Mile)



- | | | | | | |
|--|----------------|--|---------------------|--|----------------|
| | Class 1 Stream | | Salt Water | | Existing Roads |
| | Class 2 Stream | | Fresh Water Lakes | | Proposed Roads |
| | Class 3 Stream | | High Value Wetlands | | Selected Road |
| | | | Other Wetlands | | |

Road Number Miles

3016	2.15
3016-300	1.26
3016-400	2.02
3016-500	0.57
3016-600	0.94

6.93



Road Data Card

Road Number: 70-82-14

ROD Road Number: 3016-500

M.P. :

To M.P. :

Actual Length (miles): .57

New or Reconstruct:

N

Unit(s) Accessed: 575-412

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: C,L

Traffic Service Level: C,D

Highway Safety Act Number: No

Design Vehicle: LT

Critical Vehicle: LB

Intended Purpose and Use: Silvicultural
activities

Maintain Level: 2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 309', Construction: 98% Easy, 2% Medium, 0% Difficult, # of > 48" Culverts: 0; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossing: 341'; # of "V" notches: 0; Units accessed: 1 unit; # of quarry Sites: 0; # of Switchbacks: 0; Ft. if Critical Grades: 355'.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 1 - Class II 0 - Class III): . Road crosses a class II stream. no timing restrictions are necessary but culverts will be designed to allow fish passage during normal and low flows, and to minimize downstream scour.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: no state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

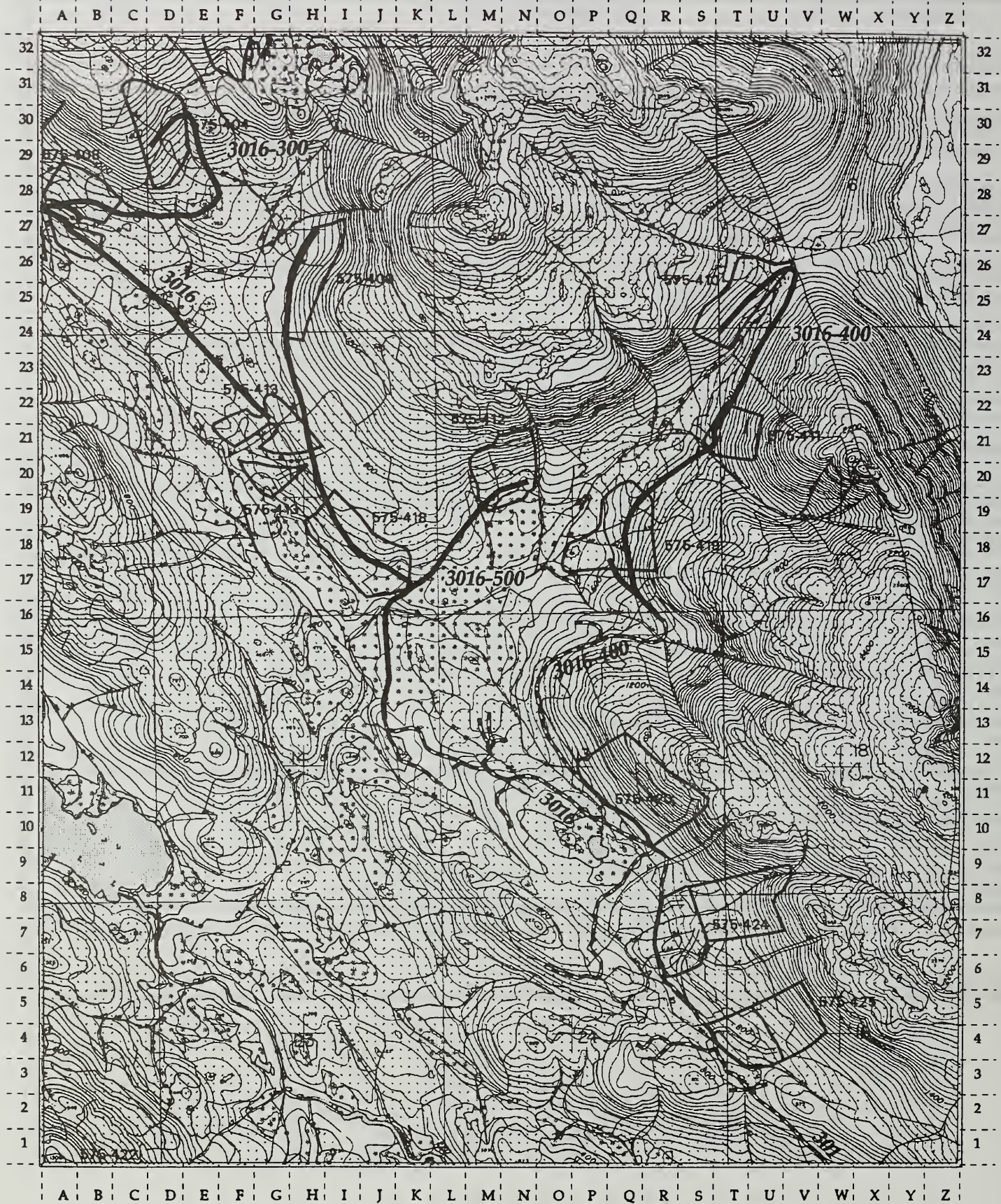
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3016 - h

Mapscale 1:31680 (2 inch to Mile)



- | | | |
|----------------|---------------------|----------------|
| Class 1 Stream | Salt Water | Existing Roads |
| Class 2 Stream | Fresh Water Lakes | Proposed Roads |
| Class 3 Stream | High Value Wetlands | Selected Road |
| | Other Wetlands | |

Road Number Miles

3016	2.15
3016-300	1.26
3016-400	2.02
3016-500	0.57
3016-600	0.94

6.93



Road Data Card

Road Number: 70-82-11.1

ROD Road Number: 3016-600

M.P.:

To M.P.:

Actual Length (miles): .154

New or Reconstruct:

N

Unit(s) Accessed: 575-409

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: L

Traffic Service Level: C,D

Highway Safety Act Number: No

Design Vehicle: LT

Critical Vehicle: LB

Intended Purpose and Use: Silvicultural
activities

Maintain Level: 1, 2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located: Road is outside of high probability cultural resource areas.

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Length: 5862', Construction: 3% Easy, 97% Medium, 0% Difficult, # of > 48' Culverts: 0; # of bridges: 0; Ft. of cross slopes > 55%: 0; Ft. of Muskeg crossing: 359'; # of "V" notches: 0; Units accessed: 1 unit; # of quarry Sites: 1; # of Switchbacks: 0; Ft. if Critical Grades: 0'.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (1 - Class I 1 - Class II 2 - Class III): . Class II stream crossing does not require special timing, but culverts will be designed to allow fish passage during normal and low flows, and to minimize downstream scour.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No Karst encountered during reconnaissance.
as located:

LANDS/MINERALS as planned: no state/private encumbered lands occur adjacent to the road.
as located:

RECREATION/VISUALS as planned: This segment of road will not be visible from a priority travel route/ use area.
as located:

SILVICULTURE as planned: Maintain access for future silvicultural activities.
as located:

SOILS / WATERSHED as planned: All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 14.8).
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned:
as located:

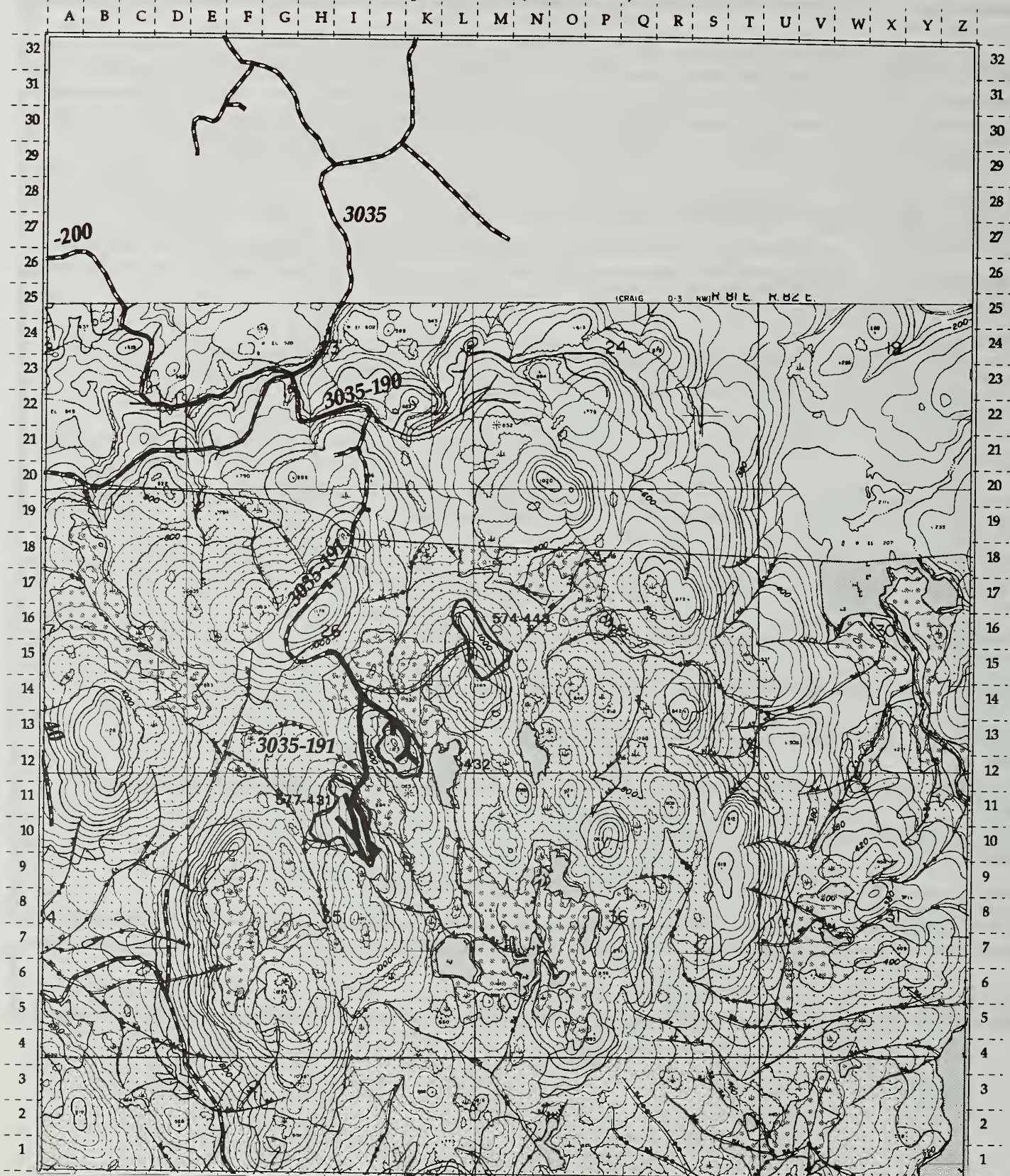
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3035 - b

Mapscale 1:31680 (2 inch to Mile)



- Class 1 Stream
- Class 2 Stream
- Class 3 Stream



- ▨ Salt Water
- Fresh Water Lakes
- High Value Wetlands
- ▤ Other Wetlands

- Existing Roads
- Proposed Roads
- Selected Road

Road Number Miles

3035-191 1.22
3035-196 0.43
3035-246 1.04

2.69



Road Data Card

Road Number: 69-81-26.7	ROD Road Number: 3035-191	M.P. :	To M.P. :
	Actual Length (miles): 1.0	New or Reconstruct:	New
Unit(s) Accessed: 577-431	Road Locator:		

ROAD MANAGEMENT OBJECTIVES

Functional Class: Local	Traffic Service Level: C,D	Highway Safety Act Number: No
Design Vehicle: Log truck	Critical Vehicle: Lowboy	Intended Purpose and Use: Silvicultural treatment
Maintain Level: 1,2		Closure Device: Barrier
Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit		Erosion Control: Waterbar
Other Considerations:		

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction. Two temporary spurs within unit.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): One Class II stream crossing requires timing window of July 18-August 15.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No concerns.
as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/Use Area.
as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.
as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils following road construction activities. (BMP 14.8)
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design.
as located:

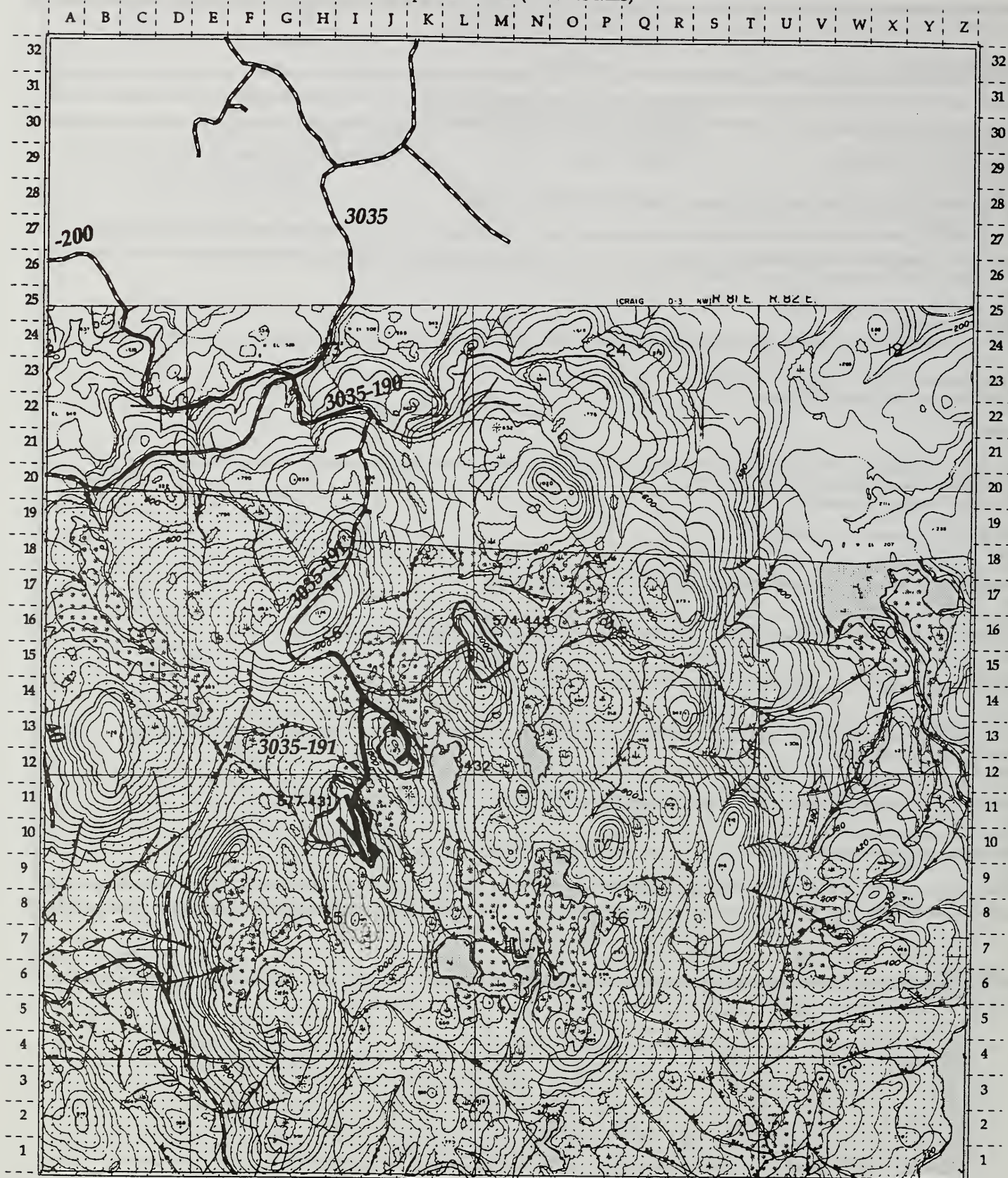
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

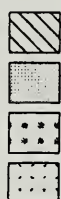
Date

Control Lake Project Area Draft Road Card 3035 - b

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
—••— Class 2 Stream
— Class 3 Stream



Salt Water

Fresh Water Lakes

High Value Wetlands

Other Wetlands

— Existing Roads
— Proposed Roads
— Selected Road

Road Number Miles

3035-191 1.22
3035-196 0.43
3035-246 1.04

2.69



Road Data Card

Road Number: 69-81-26

ROD Road Number: 3035-191-098

M.P. :

To M.P. :

Actual Length (miles): 1.25

New or Reconstruct:

New

Unit(s) Accessed: 574-443

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: Local

Traffic Service Level: C,D

Highway Safety Act Number: No

Design Vehicle: Log truck

Critical Vehicle: Lowboy

Intended Purpose and Use: Silvicultural treatment

Maintain Level: 1,2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction. Two temporary spurs within unit and accounted for in actual miles.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation: .

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): One Class II stream crossing requires timing window of July 18-August 15.

Stream Crossings As Located (Class I Class II Class III):

Cataloged Stream Crossings As Located:

GEOLOGY/KARST as planned: No concerns.
as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.
as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/Use Area.
as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.
as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils following road construction activities. (BMP 14.8)
as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design.
as located:

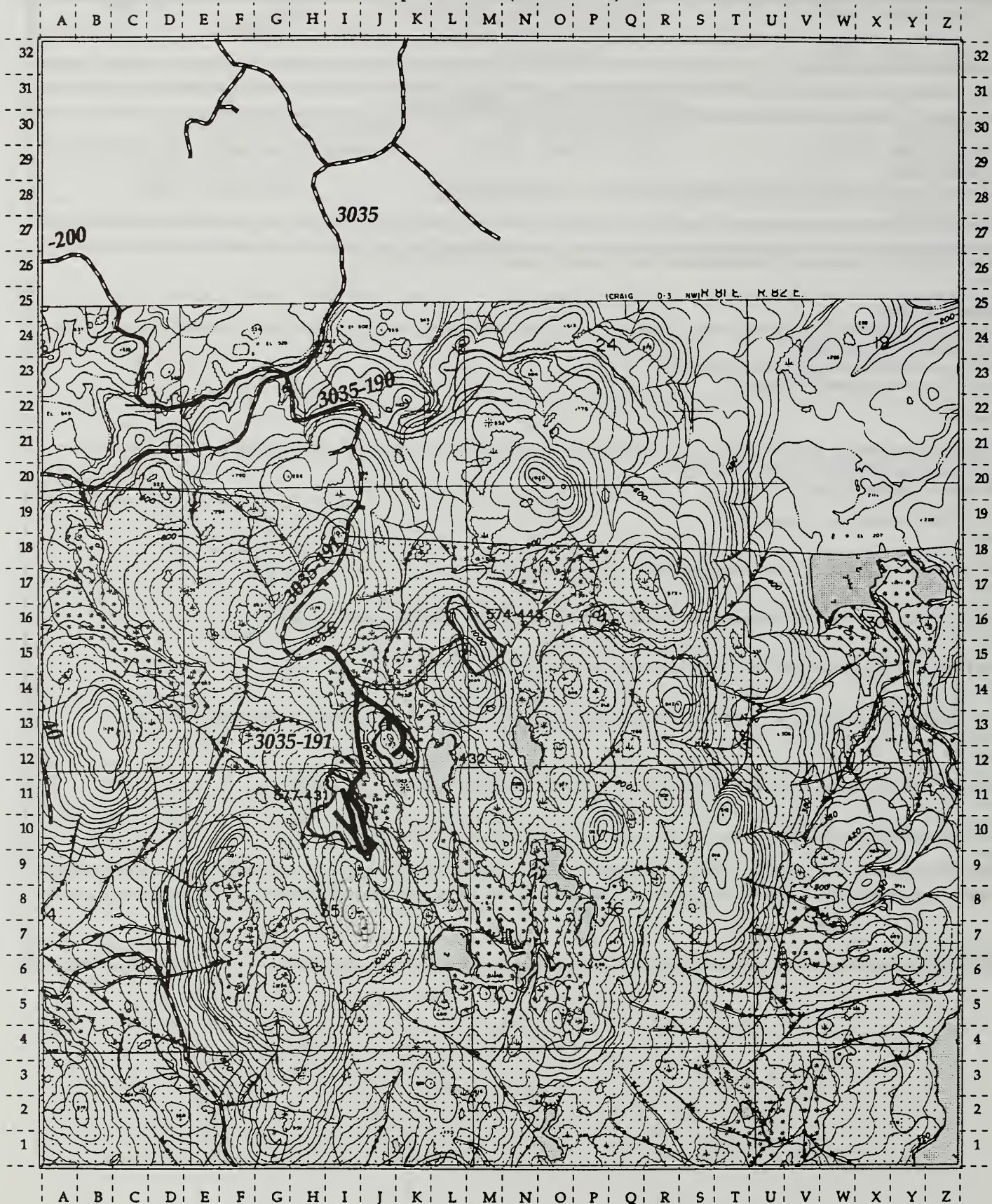
WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.
as located:

Ranger's Signature

Date

Control Lake Project Area Draft Road Card 3035 - b

Mapscale 1:31680 (2 inch to Mile)



—•— Class 1 Stream
 —••— Class 2 Stream
 ——— Class 3 Stream



Salt Water

Fresh Water Lakes

High Value Wetlands

Other Wetlands

— — — Existing Roads
 = = = Proposed Roads
 — — — Selected Road

Road Number Miles

3035-191 1.22
 3035-196 0.43
 3035-246 1.04

 2.69



Road Data Card

Road Number: 69-81-26.1

ROD Road Number: 3035-191-099

M.P. :

To M.P. :

Actual Length (miles): 1.25

New or Reconstruct:

New

Unit(s) Accessed: 577-432

Road Locator:

ROAD MANAGEMENT OBJECTIVES

Functional Class: Local

Traffic Service Level: C,D

Highway Safety Act Number: No

Design Vehicle: Log truck

Critical Vehicle: Lowboy

Intended Purpose and Use: Silvicultural treatment

Maintain Level: 1,2

Closure Device: Barrier

Management Strategy (Encourage, Accept, Discourage, Eliminate or Prohibit): Prohibit

Erosion Control: Waterbar

Other Considerations:

CULTURAL RESOURCES as planned: Road is outside of high probability areas for cultural resources.
as located:

ENGINEERING/ROADS

Recon/Location Narrative/Design Considerations (major drainages, road grades, future access, etc.): Easy construction. Two temporary spurs within unit and accounted for in actual miles.

Planned vs Implemented (describe changes and rational):

Rock Source(s) Location and Special Mitigation:

FISH HABITAT

Stream Crossings As Planned (0 -Class I 0 - Class II 0 - Class III): No stream crossings.

Stream Crossings As Located (Class I Class II Class III): No stream crossings.

Cataloged Stream Crossings As Located: No stream crossings.

GEOLOGY/KARST as planned: No concerns.

as located:

LANDS/MINERALS as planned: No State/private encumbered lands adjacent to road.

as located:

RECREATION/VISUALS as planned: This segment of the road will not be visible from a Priority Travel Route/Use Area.

as located:

SILVICULTURE as planned: Maintain future access for silvicultural activities.

as located:

SOILS / WATERSHED as planned: Grass seeding and fertilizing required on all areas of exposed organic and mineral soils following road construction activities. (BMP 14.8)

as located:

TIMBER/LOGGING SYSTEM/ADMINISTRATION as planned: Road meets objectives for logging system design.

as located:

WILDLIFE as planned: Road does not approach within 1/2 mile of any known bald eagle nest sites.

as located:

Ranger's Signature

Date



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